
QUESTION OF THE DAY

Book 7



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PREFACE

For the past couple of years, CAT and other MBA entrance exams have shown a trend towards questions testing a student's ability to apply Mathematical Principles and Analytical Reasoning to solve problems. The unpredictable nature of CAT has ensured that most students are never fully prepared to ace the exam. This is because students limit their preparation to just the learning and practice of core concepts of Mathematics, Verbal Ability and Data Interpretation & Logical Reasoning.

This book is a compilation of the questions with a difficulty level typically on par with CAT. Every single question is original and unique, created by our dedicated team of subject matter experts. The questions are designed to give our readers greater exposure to the types of questions that appear in CAT. The detailed solutions in this book may also provide alternate strategies and shortcuts to solve problems. This book will give students that extra edge and confidence needed to be ready for any surprise that CAT might throw their way.

This book is the 7th in a series of books on the 'Question of the Day' featured on the TestFunda site. We are sure that our readers will benefit greatly from these books.

Question of the Day #01: (02-Jun-09)

If α, β are the roots of the equation $7x^2 - 5x + 2 = 0$, then what is the value of $(1 + \alpha + \alpha^2 + \alpha^3 + \dots \text{ up to } \infty)(1 + \beta + \beta^2 + \beta^3 + \dots \text{ up to } \infty)$?

OPTIONS

- 1) $\frac{8}{5}$
- 2) $\frac{7}{4}$
- 3) $\frac{9}{5}$
- 4) $\frac{7}{5}$
- 5) None of these

Question of the Day #02: (03-Jun-09)

The question below contains a paragraph with a missing sentence or part of a sentence. Choose the option that most logically completes the paragraph.

Their methods then became so uncanny, and their man-stalking so well-timed and so certain of success, that the workmen firmly believed that they were not real animals at all, but devils in lions' shape. Many a time the coolies solemnly assured me that it was absolutely useless to attempt to shoot them. They were quite convinced that the angry spirits of two departed native chiefs had taken this form in order to protest against a railway being made through their country,_____

OPTIONS

- 1) And by attacking humans to avenge the insult thus shown to them.
- 2) And by stopping its progress to avenge the insult thus shown to them
- 3) And by not stopping its progress to avenge the insult thus shown to them.
- 4) And by not attacking humans to avenge the insult thus shown to them.
- 5) And by stopping work in the area to avenge the insult thus shown to them.

Question of the Day #03: (04-Jun-09)

A function $p(k, n)$ is defined as

$$p(k, n) = 0 \text{ if } k > n$$

$$p(k, n) = 1 \text{ if } k = n$$

$$p(k, n) = p(k + 1, n) + p(k, n - k) \text{ otherwise}$$

Where n and k are positive integers .What is the value of $p(4, 16)$?

OPTIONS

- 1) 11
- 2) 12
- 3) 15
- 4) 16
- 5) None of these

Question of the Day #04: (05-Jun-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

Civilisation is a kind of mould that each nation is busy making for itself to shape its men and women according to its best ideal. All its institutions, its legislature, its standard of approbation and condemnation, its conscious and unconscious teachings tend toward that object. The modern civilisation of the west, by all its organised efforts, is trying to turn out men perfect in physical, intellectual, and moral efficiency. There the vast energies of the nations are employed in extending man's power over his surroundings, and people are combining and straining every faculty to possess and to turn to account all that they can lay their hands upon, to overcome every obstacle on their path of conquest. They are ever disciplining themselves to fight nature and other races; their armaments are getting more and more stupendous every day; their machines, their appliances, their organisations go on multiplying at an amazing rate. This is a splendid achievement, no doubt, and a wonderful manifestation of man's masterfulness which knows no obstacle, and which has for its object the supremacy of himself over everything else.

OPTIONS

- 1) The entire concept of civilization is just a farce that man has created to establish himself as the most superior being on earth.
- 2) As long as man conceptualizes civilization as a way to rule the world, he will be beset with hazards and problems.
- 3) Though civilization is a splendid achievement, the objective has been to establish man's supremacy over everything else on earth.
- 4) Civilization should not concentrate on achievements through its vanquishing nature.
- 5) Man should create a civilization that would embrace everything else on earth too.

Question of the Day #05: (06-Jun-09)

What is the positive value of x which satisfies the equation given below?

$$\sqrt{x} + \sqrt{x - \sqrt{1-x}} = 1$$

OPTIONS

- 1) 2.34
- 2) 3.33
- 3) 0.64
- 4) 0.67
- 5) None of these

Question of the Day #06 (07-Jun-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

The term "Impressionists" quickly gained favour with the public. It was also accepted by the artists themselves, even though they were a diverse group in style and temperament, unified primarily by their spirit of independence and rebellion. They exhibited together- albeit with shifting membership- eight times between 1874 and 1886. Monet, Sisley, Morisot, and Pissarro may be considered the "purest" Impressionists, in their consistent pursuit of an art of spontaneity, sunlight, and colour. Degas rejected much of this, as he believed in the primacy of drawing over colour and belittled the practice of painting outdoors. Renoir turned against Impressionism for a time in the 1880s, and never entirely regained his commitment to its ideas. Édouard Manet, despite his role as a leader to the group, never abandoned his liberal use of black as a colour, and never participated in the Impressionist exhibitions. He continued to submit his works to the Salon, where his *Spanish Singer* had won a 2nd class medal in 1861, and he urged the others to do likewise, arguing that "the Salon is the real field of battle" where a reputation could be made.

OPTIONS

- 1) Impressionists were an odd bunch with artists of all extremities forming the group. Proponents of impressionism often drifted away from it. Monet, Sisley, Morisot, Renoir and Pissarro were considered the purest impressionists.
- 2) Purest impressionists were Manet, Sisley, Morisot, Renoir and Pissarro. They were famous for their spirit of independence and rebellion. They were consistently in pursuit of an art of spontaneity, sunlight, and colour.
- 3) Impressionists were a diverse group united by their spirit of independence and rebellion. There were those who displayed the consistent pursuit of an art of spontaneity, sunlight, and colour. But some former proponents turned against impressionism.
- 4) Pure impressionists were the only true impressionists. Their spirit of independence and rebellion set them apart from other artists. Their constant pursuit of spontaneity, sunlight, and colour set them apart in spite of criticism.
- 5) Impressionists became popular with the masses because of their spirit of independence and rebellion. In the face of criticism from its proponents, impressionists were consistent in their pursuit of an art of spontaneity, sunlight, and colour.

Question of the Day #07: (08-Jun-09)

The speed of a rail engine is 42 km/hr when no compartment is attached to it and the reduction in speed is directly proportional to the square root of the number of compartments attached. If the speed of the train carried by this engine is 24 km/hr when 9 compartments are attached, then what is the maximum number of compartments that can be carried by the engine so that it can move?

OPTIONS

- 1) 48
- 2) 49
- 3) 46
- 4) 47
- 5) None of these

Question of the Day #08: (09-Jun-09)

Answer the question based on the statement given below.

A stupid man's report of what a clever man says can never be accurate, because he unconsciously translates what he hears into something he can understand.

Which of the following is an assumption underlying the above statement?

OPTIONS

- 1) Stupidity and cleverness are not relative concepts.
- 2) A clever man can never say anything that a stupid person can accurately report.
- 3) What a stupid person can understand, he reports accurately.
- 4) A stupid person can report only what he understands.
- 5) A stupid person cannot report what a clever person says.

Question of the Day #09: (10-Jun-09)

If x is a real number and $x \neq 0$, also

$$\frac{9x^2}{(1 - \sqrt{1 + 3x})^2} = 3x + 11,$$

Then which of the following is true?

OPTIONS

- 1) $x = \frac{77}{12}$
- 2) $x = \frac{75}{13}$
- 3) $x = \frac{69}{14}$
- 4) $x = \frac{81}{17}$
- 5) None of these

Question of the Day #10: (11-Jun-09)

Answer the following question based on the information given below.

One man is taking the heat so that all men can compete in the kitchen for 'Best Cook of Mexico City' honours. Benjamin Garcia is outraged that Mexico City officials barred him from entering the contest last year because he is a man. He has filed a complaint with the city's Human Rights Commission, arguing the contest discriminated against men and stereotyped women, and that men should be allowed to participate.

Which of the following argument will weaken Garcia's demand?

OPTIONS

- 1) Traditionally men are not good cooks; hence, it is pointless for them to try and compete with women.
- 2) Garcia is the only man who has expressed his desire to participate in a competition meant for only women.
- 3) There are several competitions meant only for men and women never complain.
- 4) This is a competition meant to honour housewives.
- 5) There is a separate competition for 'Best Chef of Mexico City' meant only for men.

Question of the Day #11: (12-Jun-09)

A question is followed by two statements, A and B. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement A alone but not by using statement B alone.

Mark (2) if the question can be answered by using statement B alone but not by using statement A alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

Is the two digit number XY divisible by 7?

A. $X + Y = 7$

B. $4X + 6Y$ is divisible by 7

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #12: (13-Jun-09)

Answer the question based on the passage given below.

David Colquhoun, a pharmacologist at University College London and a member of the Complementary and Natural Healthcare Council, wants the National Institute for Health and Clinical Excellence, which rules on the cost-effectiveness of traditional therapies, to examine the evidence for complementary medicine. "The whole problem of regulating alternative medicine will remain impossibly chaotic until the government grasps the nettle of deciding what works and what doesn't," he says.

Which of the following best strengthens the argument of the pharmacologist David Colquhoun?

OPTIONS

- 1) Consumer protection laws that forbid false claims that a product can cure a disease need to be strengthened.
- 2) Alternative medicines do not work or have never been tested.
- 3) Agencies specially constituted to license conventional drugs, excuse homeopathy, unlike other treatments, from proving it is more effective than a placebo.
- 4) In traditional therapies, there are bodies that oversee doctors and nurses and ascertain whether their practitioners' efforts actually work.
- 5) The Advertising Standards Authority can decide on whether alternative medicine does what it claims to.

Question of the Day #13: (14-Jun-09)

What is the positive real value of x which satisfies the following equation?

$$\sqrt{5-x} - \sqrt{x+2} = \frac{5}{2}$$

OPTIONS

- 1) $\frac{12 + 6\sqrt{31}}{8}$
- 2) $\frac{12 + 5\sqrt{31}}{8}$
- 3) $\frac{10 + 3\sqrt{31}}{8}$
- 4) $\frac{10 + 5\sqrt{775}}{8}$
- 5) None of these

Question of the Day #14: (15-Jun-09)

The economic downturn has made the world more violent and unstable in the last year, according to a study. The impact of high food and fuel prices in early 2008 and the deepening recession later in the year eroded peace, according to the Global Peace Index, compiled by a unit of The Economist magazine group. Economic weakening has increased political instability, demonstrations and crime in some countries, according to the study. "Rapidly rising unemployment, pay freezes and falls in the value of house prices, savings and pensions is causing popular resentment in many countries, with political repercussions," the report says.

Which of the following, if true, would seriously challenge the conclusion of the study?

OPTIONS

- 1) The study ranked the countries on 23 indicators including political stability, warfare, human rights, murder rates, military spending, and international relations.
- 2) Peace is a leading indicator on economic prosperity.
- 3) Iceland, the most peaceful nation last year, fell to fourth place after violent protests over its economic meltdown.
- 4) New Zealand at the head of the table improved its position because of the new coalition government with a strong parliamentary majority and its low homicide rate and defence spending.
- 5) Afghanistan and Iraq, which are the bottom two of the list, were in the last year riddled by violent terrorist activities arising from anti-west sentiments and ideologies.

Question of the Day #15: (16-Jun-09)

A question is followed by two statements, I and II. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement I alone but not by using statement II alone.

Mark (2) if the question can be answered by using statement II alone but not by using statement I alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by using any of the statements alone.

Mark (5) if the question cannot be answered even after using both the statements.

If $M = (3^n - 2n - 1)$, then is M divisible by 4?

- I. n is a natural number greater than 1.
- II. $n^3 > 1$

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #16: (17-Jun-09)

Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

The youth in today's India are actually a 'silver spoon' generation. Not only have they been born to a time that's relatively more affluent and buoyant, they are also making the maximum of what they have in careers or in relationships. This generation has no baggage of yesterday and has no gaping need-gaps as of today. Such a state of its consumer is a nightmare for classical marketing which is designed over the years to identify large need-gaps in its consumers and find ways of fulfilling them._____.

OPTIONS

- 1) A brand for this audience has to make them feel liberated and empowered.
- 2) A brand for this audience has to be built on a model of the need gap approach.
- 3) A brand for this audience has to legitimize their way of life.
- 4) A brand for this audience cannot be built on the traditional models of youth marketing.
- 5) A brand for this audience cannot be built by being one with them.

Question of the Day #17: (18-Jun-09)

In a group of 15 children, each child has 15 chocolates of the same kind and no two children have chocolates of the same kind. What is the minimum number of transactions required for each child to have chocolates of all kinds, given that a transaction can take place only between two children at a time and any number of chocolates can be exchanged in a transaction?

OPTIONS

- 1) 27
- 2) 105
- 3) 225
- 4) 14
- 5) None of these

Question of the Day #18: (19-Jun-09)

America's once mighty car industry is heading for the scrap yard. Plunging sales amid a financial crisis and economic downturn forced General Motors and Chrysler to seek a government bailout – Ford is the only one of Detroit's "Big Three" that reckoned it could survive without help. But by the end of April, Chrysler, the weakest car maker, was forced to file for bankruptcy protections after its creditors refused to agree on a survival plan that included a tie-up with Italy's Fiat. GM, which has announced a radical restructuring, also faces bankruptcy at the end of May if its aggrieved bondholders gamble on getting a better deal in the courts.

Which of the following can be validly concluded from the above?

OPTIONS

- 1) General Motors, Ford and Chrysler are considered the "Big Three" in the car Industry.
- 2) America's car industry may be saved from decline through government bail-outs.
- 3) Ford may be the only American car manufacturer that will survive the crisis.
- 4) At least two of Detroit's "Big three" car manufacturers are going to go bankrupt.
- 5) America's car industry appears to be in terminal decline.

Question of the Day #19: (20-Jun-09)

A question is followed by three statements, I, II and III. Answer the question using the following instructions:

Mark (1) if the question can be answered by using any one of the statements alone. [I or II or III]

Mark (2) if the question can be answered by using any two of the statements together. [(I and II) or (II and III) or (III and I)]

Mark (3) if the question can be answered by using all the three statements together. [I and II and III]

Mark (4) if the question cannot be answered on the basis of the three statements.

$|x^2 - y^2| = n$, Is n an odd number?

- I. $(x + y)$ is odd.
- II. x and y are distinct.
- III. n is an integer.

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4

Question of the Day #20: (21-Jun-09)

Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

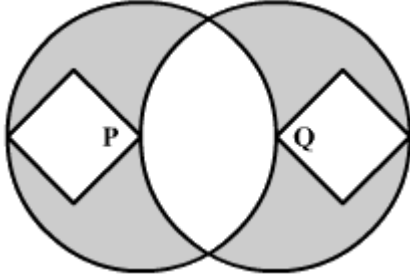
It is a challenge for democracy how animal rights issues can get an important place in politics. There is no doubt that the issue is important, but tigers, buffaloes and birds don't have any votes. The thing to do, then, is to link up the protection of animals with the protection of sustainable livelihoods. In other words, if we have a concept of wild life protection in which tribals and forest dwellers can be involved on a large scale in wild life protection by providing them sustainable livelihoods for this work, we can have schemes with a lot of potential to actually protect wild life. ____.

OPTIONS

- 1) In addition, it will generate a great deal of interest from political parties who want to attract tribal votes.
- 2) In addition, such schemes can obviously be in the forefront of election campaigns.
- 3) In addition, mass mobilisation based on issues of sustainability becomes possible.
- 4) In addition, animal rights issues can get an important place in politics.
- 5) In addition, it will compel political parties to give their whole attention to issues of critical importance like protection of environment.

Question of the Day #21: (22-Jun-09)

Two equal circles having radii of $2a$ units and centres P and Q respectively intersect each other as shown in figure, such that the first circle passes through the centre of the second circle and the second circle passes through the centre of the first circle. Two identical squares are drawn inside the circles as shown in the figure. What is the area of the shaded region?



OPTIONS

- 1) $\left[\frac{4\pi}{3} + 4(\sqrt{2} - 1) \right] a^2$
- 2) $\left[\frac{4\pi}{3} + 2(\sqrt{2} - 1) \right] a^2$
- 3) $\left[\frac{8\pi}{3} + 4(\sqrt{3} - 1) \right] a^2$
- 4) $\left[\frac{4\pi}{3} + 4(\sqrt{3} - 1) \right] a^2$
- 5) None of these

Question of the Day #22: (23-Jun-09)

The big question about the influenza with pandemic potential that struck in April generally referred to as “swine flu” is why it kills some people and not others—in particular, why it hits the young (and thus, presumably, healthy) harder than the elderly. A study has found that nearly two-thirds of swine-flu infections in America have been in people aged between five and 24, whereas only 1% of cases affected those over 65. This is the reverse of the pattern seen in seasonal flu, which kills more old people every winter.

Which of the following, if true, could possibly explain the reverse patterns seen in seasonal and swine flu?

OPTIONS

- 1) The young are more susceptible to all kinds of illnesses and especially to fatal illnesses because of their undeveloped immune system.
- 2) The older people are susceptible to all kinds of illnesses and especially to fatal ones because their immune system is worn out.
- 3) The virus that causes the swine flu takes about fifty years to attain maturity and cause symptoms after it has entered the human system.
- 4) The older people might have been in contact with similar viruses for a long time which might give them some immunity.
- 5) The young people might have been in contact with similar viruses for some time which might give them some immunity.

Question of the Day #23: (24-Jun-09)

A question is followed by two statements, I and II. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement I alone but not by using statement II alone.

Mark (2) if the question can be answered by using statement II alone but not by using statement I alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by using any of the statements alone.

Mark (5) if the question cannot be answered even after using both the statements.

If n is a natural number,

then is $n! < \left(\frac{n+1}{2}\right)^x$?

I. n is an even number.

II. $x = n$

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #24: (25-Jun-09)

Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

Central to Kallat's work is the relationship between text, images, traditional and contemporary symbols. The urban milieu of Mumbai remains his primary muse; it's nurturing of high glamour, human suffering, simmering aggression and swarming masses an ongoing preoccupation. One of his most ambitious installations till date- Aquasaurus, a seven-metre long water-tanker, fashioned from bones, that morphs to become a macabre prehistoric creature for instance, personifies the radical transformation of Indian city life. ____.

OPTIONS

- 1) "I am liberalisation's child; my worldviews are different from artists born twenty years before me," explains Kallat
- 2) ."If you're a remotely interesting artist, easy classification should be difficult," Kallat says.
- 3) "There was a certain shifting in some of the known territories of painting," Kallat says.
- 4) "Rules were being dismantled and I knew I could make a value addition as a young artist," Kallat says
- 5) ."Your work is largely what you breathe in," explains Kallat.

Question of the Day #25: (26-Jun-09)

What is the length of the chord PQ of the circle $x^2 + y^2 - 4x - 1 = 0$, if the coordinates of point Q are (1, 2)? The chord PQ makes an angle of 60° with the radius of the circle at the point Q.

OPTIONS

- 1) $\sqrt{5}$ units
- 2) $2\sqrt{5}$ units
- 3) $\sqrt{10}$ units
- 4) 2 units
- 5) None of these

Question of the Day #26: (27-Jun-09)

With the Congress winning a 'thumping mandate' (leaving mathematicians aghast and wondering how and why the media can describe the inability to reach a simple majority using such superlatives) 'political experts' are offering every and any possible explanation for the victory. One of the many explanations is the 'advertising strategy' done by the various political groupings. Currently televised debates are dime a dozen on the 'positivity, inclusiveness, youthfulness, pan-India appeal' of the ads of the victors and the 'negativity, incoherence, exploitative nature' of the ads of the losers. The experts cannot be faulted. Any practising manager can tell you, post-victory, virtually every misstep can be recast as strategy.

Which of the following is the underlying assumption in the analysis offered by the 'political experts'?

OPTIONS

- 1) Popular ad campaigns are not enough to win elections.
- 2) Post victory the mistakes of the election campaign are not highlighted.
- 3) Popular ad campaigns can win elections.
- 4) The ad campaigns of the losers are seen to be faulty only after the results of the election.
- 5) Attributing success and failure in the elections to ad campaigns is an oversimplification.

Question of the Day #27: (28-Jun-09)

A question is followed by two statements, I and II. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement I alone but not by using statement II alone.

Mark (2) if the question can be answered by using statement II alone but not by using statement I alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

What is the remainder when the largest possible 6 digit odd number is divided by the sum of the digits of a natural number X ?

- I. Square of half of X is the same as product of X with the average of the first two odd prime numbers.
- II. X is a two digit number.

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #28: (29-Jun-09)

Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

There was a time when models were celebrities in their own right. Karen Lunel as the Liril girl, Jugal Hansraj as the Nutramul 'dada' and Vicks kid, Kavita Choudhari as 'Lalitaji', Col Raj Kapoor in the Volfarm (a tomato ketchup by Voltas) ad and Preity Zinta as the Perk girl to name but a few, will be recalled by those on the wrong side of 30. In time though models have had to cede stardom to Bollywood and cricketers and today we tend to think of models as the cutie-pie Sardarji kid in the Maruti-800 ad, the Malayali fisherman who used FeviKwik as his bait and the funny guy in the Centreshock commercials. _____

OPTIONS

- 1) They are remembered for their great performances, though the faces are forgotten.
- 2) They are no longer celebrities or stars though one can still put a face to them.
- 3) Little surprise then that they are household names though they have no identity.
- 4) They have no identities and are quickly forgotten, though the ads are remembered.
- 5) They span a wide variety of cultures and identities and endear themselves to the audience.

Question of the Day #29: (30-Jun-09)

P, Q and R played a number of card games, which required three players per game. Each game had only one winner and there were no draws. Each player scored 5 points for a win and lost 3 points for a loss. At the end, P had -20 points, Q had -12 points and R had 12 points. How many games did the three play in all?

OPTIONS

- 1) 30
- 2) 20
- 3) 15
- 4) 18
- 5) 10

Question of the Day #30: (01-Jul-09)

With lay-offs and salary cuts, and of course, more work being assigned to less number of people, it has become all the more challenging to innovate ideas in order to keep up the motivation level of employees. Unique methods to do so can only provide stronger means of running a successful organisation. The key is to use newer approaches that continually reinforce the fact that employees' ideas are welcome, valued, and rewarded. "Engaged and motivated associates deliver better effectiveness and efficiency. Constantly improving and innovating the practices deployed to motivate the associates is a must, irrespective of the market situation," says Satyanarayana Vinjamoori, head - human resources, ADP India, a US based ITES company.

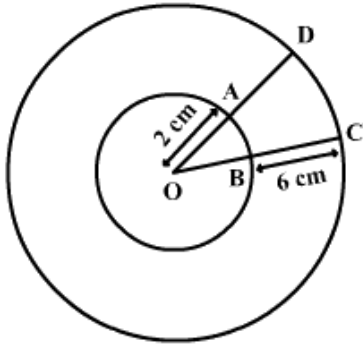
The ideas in the above argument are based on which of the following assumptions?

OPTIONS

- 1) Engaged and motivated employees create successful organisations.
- 2) Strategies and corporate plans cannot be successful without the committed and passionate involvement of the employees.
- 3) Engaged and motivated employees help create positive perceptions about the company in the market.
- 4) During tough times, employees will unite to ensure that their organisation is able to meet its objectives.
- 5) Both options 1 and 2.

Question of the Day #31: (02-Jul-09)

In the given diagram, AB and DC are arcs of concentric circles with centre O. The perimeter of the figure ABCD is 22 cm. What is the area of the figure ABCD?



OPTIONS

- 1) 30 cm²
- 2) 28 cm²
- 3) 49 cm²
- 4) 48 cm²
- 5) Cannot be determined

Question of the Day #32: (03-Jul-09)

Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

People walking in the streets look out for different things. Bargain sunglasses, for example, or the latest pirated movie or, more practically, for broken pavements and puddles. Me, I look out for bananas . But not any bananas – and certainly not the identically bright yellow, elegantly curved Cavendish variety which is fast predominating with banana sellers in places like Mumbai. Cavendishes, I have to keep reminding myself, are not that bad. They are agreeably sweet, well textured and have a picture perfect banana look – but that is their problem. Cavendishes were developed by the banana industry for the huge American market where they are almost the only banana variety known. _____

OPTIONS

- 1) Thanks to this, American consumers have very definite ideas about what bananas are like, and that is Cavendish and no other.
- 2) But this is India where we eat more bananas than anyone else and have a matchless range of local varieties of all shapes, sizes and flavours.
- 3) But it is fine if one was unfortunate enough to be American.
- 4) The good thing is that some still sell desi varieties, and this is what I look out for while walking.
- 5) Cavendish growers are dumping their surplus on the local market, branding it with names like 'Golden Banana' to persuade us that it is superior.

Question of the Day #33: (04-Jul-09)

If $\cos(x - y)$, $\cos x$, $\cos(x + y)$ are in H. P.,

then $\left| \cos x \times \sec \frac{y}{2} \right|$ is equal to

OPTIONS

- 1) 1
- 2) 2
- 3) $\sqrt{2}$
- 4) 0
- 5) None of these

Question of the Day #34: (05-Jul-09)

Will our new government cling to the disaster management agenda of its past term? 'Am admi' demands a fundamental reorientation. I spent a significant part of the pre-election period in the flood and tsunami-affected areas of Orissa, West Bengal, Gujarat, Tamil Nadu and Bihar. Talking with people in recovering communities revealed that for 'am admi', the purpose of national disaster management is two-fold: the national government must promote safe economic growth as well as help reduce risks faced by the poor.

Which of the following, if true, would make the 'am admi's' demands (about fundamental reorientation of the government's disaster management agenda) unattainable?

OPTIONS

- 1) Economic growth and safety of the poor do not go hand in hand.
- 2) Disaster management strategies protect economic growth by helping communities and businesses insulate themselves against the impacts of disasters.
- 3) Disasters and their responses are extremely costly.
- 4) The 'am admi' that voted for the new government lives on a small farm and makes a living in agriculture, often using NREGS benefits (National Rural Employment Guarantee Scheme) when without work.
- 5) By protecting agriculture, disaster mitigation management programs also protect the poor from poverty aggravated by disasters.

Question of the Day #35: (06-Jul-09)

What are the number of co-primes of y less than y , where y is the largest number with which when 486, 686 and x are divided the remainders are the same and x is the largest 3 digit number which when divided by 3 or 8 leaves a remainder of 2 in each case.

OPTIONS

- 1) 10
- 2) 20
- 3) 30
- 4) 40
- 5) None of these

Question of the Day #36: (07-Jul-09)

Scientists say a natural supplement made from tomatoes, taken daily, can stave off heart disease and strokes. Ateronon, made by a biotechnology spin-out company of Cambridge University, is being launched as a dietary supplement and will be sold on the high street. Preliminary trials involving around 150 people with heart disease indicate that Ateronon can reduce the oxidation of harmful fats in the blood to almost zero within eight weeks. Lycopene is an antioxidant contained in the skin of tomatoes which gives them their red colour. But lycopene ingested in its natural form is not absorbed.

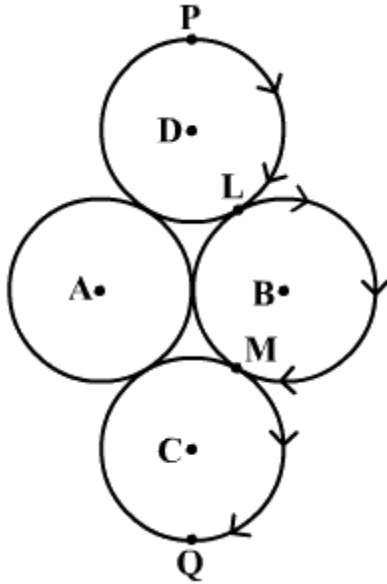
All these provide further support to the views stated in the paragraph EXCEPT

OPTIONS

- 1) The tomato pill contains an active ingredient lycopene which blocks LDL cholesterol that can clog the arteries.
- 2) In clinical trials, the dietary supplement Ateronon has been found to be more effective than statin drugs that are currently used by doctors to treat high cholesterol.
- 3) The consumption of tomatoes can help reduce the oxidation of harmful fats in the blood.
- 4) Ateronon contains a refined, more readily absorbed version of lycopene
- 5) None of these.

Question of the Day #37: (08-Jul-09)

An ant is at point P and its food is at point Q. To reach its food, the ant has to traverse through the path as shown by the arrows, reach L, then again go along the path as shown to point M, continue as directed by the arrows and reach Q. A, B, C and D are the centres of the 4 circles where points P, D, C and Q are collinear. All the circles are of radius 1 metre. What is the total distance travelled by the ant to reach Q from P?



OPTIONS

- 1) 2π
- 2) $\frac{5\pi}{2}$
- 3) 3π
- 4) $\frac{7\pi}{2}$
- 5) 4π

Question of the Day #38: (09-Jul-09)

Maruti Suzuki (India), for long Suzuki Motor Corp's (Japan) biggest overseas operation in volume terms, has emerged as the biggest driver of its Japanese parent's profits. The Indian car maker's share of Suzuki's consolidated profit rose to 46% during the year ended March 2009, up from 30% in the previous year. Maruti's topline is around 13% of the Japanese group's consolidated revenues. This when major markets, including the US, Europe and most of Asia along with Japan are down, and car sales have plummeted globally.

Which of the following, if true, must have helped Maruti Suzuki (India) to increase its share of Suzuki's profits?

OPTIONS

- 1) Suzuki Motor's sales had fallen 14% in the fiscal year.
- 2) Maruti Suzuki India's share of rural sales has gone up to 20% of the total sales from 3.5% two years ago.
- 3) Maruti Suzuki India has a range of two wheelers, the sales of all of which rose from 10% to 60 % in the fiscal year, riding on the back of increased demand from rural India.
- 4) Suzuki Motors had launched all their top line models of cars in the fiscal year in the Indian market first.
- 5) The shares of profits of other subsidiaries of Suzuki Motors in Europe and various other markets had declined in the fiscal year.

Question of the Day #39: (10-Jul-09)

A question is followed by two statements, A and B. Answer the question using the following instructions:

Mark (1) if the question can be answered by using the statement A alone but not by using the statement B alone.

Mark (2) if the question can be answered by using the statement B alone but not by using the statement A alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

Is the given polygon cyclic?

- A. Product of both of its diagonals is 45 cm^2 .
- B. Sum of product of all pairs of opposite sides of the polygon is 45 cm^2 .

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #40: (11-Jul-09)

The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

The Hyderabad-headquartered Insurance Regulatory and Development Authority (IRDA), has the dubious reputation of having only ex-bureaucrats from one particular state, Andhra, as its Chairmen. Last week, it added another 'feather' in its cap. In a blatant instance of 'babu-creep', the IRDA sought applications for appointment as insurance ombudsman in Hyderabad; but only from 'retired IAS or IRS officers'. Insurance, as everyone knows, is a highly technical field. It is far removed from the kind of file-pushing done by our bureaucrats. _____.

OPTIONS

- 1) So can IAS or IRS officers possibly deliver as ombudsmen?
- 2) An 'ombudsman' is an official to provide a check on improper government activity against the citizen.
- 3) An Insurance Ombudsman is an official appointed to look into specific complaints against insurance companies.
- 4) The strangle-hold of the bureaucracy increases!
- 5) An insurance ombudsman must have sufficient knowledge about insurance.

Question of the Day #41: (12-Jul-09)

A question is followed by two statements, A and B. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement A alone but not by using statement B alone.

Mark (2) if the question can be answered by using statement B alone but not by using statement A alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

ΔABC is an equilateral triangle and point P lies inside ΔABC . What is the sum of the distances of point P from the sides of the triangle?

- A. Co-ordinates of points P and A are (2, 2) and (3, 4) respectively.
- B. Co-ordinates of points B and C are (1, 1) and (5,1) respectively.

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #42: (13-Jul-09)

An Air France plane carrying 228 people from Brazil to France has vanished over the Atlantic after flying into turbulence, airline officials say. The Airbus sent an automatic message at 0214 GMT, four hours after leaving Rio de Janeiro, reporting a short circuit. It may have been damaged by lightning.

Which of the following, if true, most seriously weakens the hypothesis that the 'plane may have been damaged by lightning'?

OPTIONS

- 1) Aeroplanes get hit by lightning on quite a routine basis without generally any problems occurring at all.
- 2) Lightning can strike a plane flying into turbulence - the charge flows around the plane's skin and can damage electrical systems.
- 3) All aircraft wings have what are called "static wicks" which dissipate electricity safely and completely.
- 4) The Aviation Safety Network database lists just 15 incidents of damage due to lightning in more than 50 years of aviation history.
- 5) Lightning can ignite vapour in a fuel tank of an aeroplane, causing an explosion.

Question of the Day #43: (14-Jul-09)

In a polygon, the interior angles are in A.P such that the product of the 4th and the 5th term of the progression is 18200 and 5th term when divided by the second term gives a quotient of 1 and remainder of 30. What could be the number of diagonals that can be drawn in the polygon.

OPTIONS

- 1) 18
- 2) 35
- 3) 9
- 4) 20
- 5) 14

Question of the Day #44: (15-Jul-09)

Since the end of the Cold War in 1989, the world has become a more peaceful place, as “more wars have ceased than have started”, the Global Peace Index observes. Promoting peace may boost economic growth. Between 2000 and 2007, the number of conflicts fell from 40 to 30. “One of the biggest beneficiaries of this has been business”. Living without the threat of conflicts and instability gives rise to an environment in which productive employment - which can only arise if there is peace - leads to wealth creation. “People become motivated by the improved standard of their lives, rather than seeking retribution for past wrongs.” it says. Conversely, when economic development contracts, violence increases, thus harming the business environment. Military might delivers geopolitical supremacy, but peace delivers economic prosperity and stability. And that, the report insists, is what is good for business.

Which of the following most strongly strengthens the argument above?

OPTIONS

- 1) Between 2000 and 2007 global GDP, or economic output, rose from \$32tn to \$55tn.
- 2) Currently global expenditure on military personnel is 40% of global defence spending.
- 3) In 2007 alone, global defence spending rose 8.4% to \$1,140.5bn, and is predicted to increase by 34% to \$1,527.6bn by 2012.
- 4) Defence spending has a tendency to rise during times of economic hardship.
- 5) Many governments increase their defence spending in order to provide a fiscal stimulus to get the economy’s wheels turning even faster.

Question of the Day #45: (16-Jul-09)

Oh! Thou four-headed lord
The planet created by you
With all its animals.
One-fourth of all animals with Fishes
That swarm the seas.
One-fourth with insects
That are omnipresent.
One-sixth with amphibians
Who took the first step in land.
One-twelfth with reptiles
Who crawl on the earth
One-eighth with birds
Who fly in the sky
One-tenth with mammals
Who roam on the land
But after all this, thou great one
Thou did go a step further.
Thou created man.
Who now wants to rule over
Everything thou created.
So can you tell me thou arrogant human being

What percentage of all animals is man?

OPTIONS

- 1) 2
- 2) 2.5
- 3) 3
- 4) 3.5
- 5) 4

Question of the Day #46: (17-Jul-09)

The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

How will climate change affect agriculture? In the run up to the 15th Conference of Parties of the UN Framework Convention on Climate Change in Copenhagen in December 2009, a policy brief prepared by the Washington-based International Food Policy Research Institute (IFPRI) carries a dire warning. It warns water sources will become more variable, droughts and floods will stress agricultural systems, some coastal food-producing areas will be inundated by the seas, and food production will fall in some places in the interior. Developing economies and the poorest of the poor likely will be hardest hit. ____.

OPTIONS

- 1) As the brief states, ongoing negotiations to address climate change provide a unique opportunity to combine low-cost mitigation and essential adaptation outcomes with poverty reduction.
- 2) However, uncertainties about where climate change will take place and how agriculture will respond make it difficult to move forward on policies to combat the effects of climate change.
- 3) The global community must seize the opportunity if only to ensure the most basic of all securities – food security – does not remain a pipe dream for all of mankind.
- 4) The paper advocates funding research to improve understanding of the interaction between climate change and agriculture and to find cost-effective ways of reducing agriculture’s contribution to green house gas emissions.
- 5) The fact is even with the best efforts to mitigate climate change it is inevitable that the poor will be affected.

Question of the Day #47: (18-Jul-09)

How many real values of t exist ($t \neq 0$), such that

$$\sqrt{t} = \frac{t - 1}{\sqrt{t - \frac{1}{t}} - \sqrt{1 - \frac{1}{t}}}$$

OPTIONS

- 1) 0
- 2) 1
- 3) 2
- 4) 3

Question of the Day #48: (19-Jun-09)

The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

Job losses slowed dramatically in May 2009, according to the latest government reading on the battered labor market, even as the unemployment rate rose to a 26-year high. But some experts cautioned that the job market remains weak. Employers cut 345,000 jobs from their payrolls in the month, down from the revised decline of 504,000 jobs in April. This was the fewest jobs lost in a month since last September, when the bankruptcy of Lehman Brothers caused a crisis in U.S. financial markets and choked off credit for many businesses. There were still widespread job losses, as most sectors of the economy, including manufacturing, construction, retail, and business and professional services posted declines in jobs. ____.

OPTIONS

- 1) Still, the unemployment rate rose to 9.4% from 8.9% in April.
- 2) But the unemployment rate rose as people who had stopped looking for work started looking once again, and thus were classified as unemployed.
- 3) But economists cautioned that even though it was a better-than-expected jobs report, there are still signs of weakness in the economy.
- 4) But there were also some signs of growth, in education and health services, as well as the leisure and hospitality sector.
- 5) What's more, the average work week slipped again to a record low 33.1 hours.

Question of the Day #49: (20-Jul-09)

If three times the sum of the roots of the quadratic equation $x^2 - (K + 5)x + 3(2K + 1) = 0$ is equal to the product of the roots of the equation, then for what value of m and n does the equation $x^4 - Kx^3 + mx^2 + nx + 1 = 0$ have four positive roots?

OPTIONS

- 1) $m = -4, n = 6$
- 2) $m = 6, n = -4$
- 3) $m = n = 12$
- 4) $m = -2, n = -3$
- 5) $m = -3, n = 2$

Question of the Day #50: (21-Jul-09)

The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

Last week, I sat down with my producer and a flip cam and she started asking me questions about my time in Iraq. I hadn't prepared for it at all, but the memories came flooding back. There was a hat that I used to wear during my 12 weeks out there that was particularly effective for shielding me from the Iraqi desert sun. I brought that hat home, and hadn't thought about it for a year until one day my wife and I were planning a hike. I pulled out the hat and put it on at the beginning of the trail. Inexplicably, I started to sweat, developed a pit in my stomach and almost threw up. At first, I thought it was something I ate, until I realized it was the smell and feel of that hat that immediately propelled me back to the battlefield. I had found a trigger.

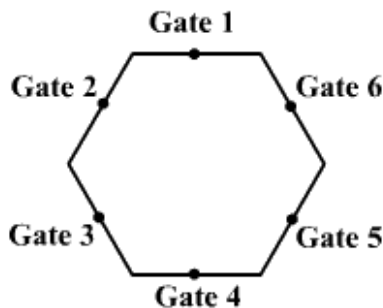
_____.

OPTIONS

- 1) I was only there for three months, as compared to military personnel that have been on the battlefield for years.
- 2) The symptoms of Post-Traumatic Stress Disorder really never go away.
- 3) There is a profound psychological and physiological reaction to something traumatic.
- 4) A traumatic event can't be completely undone, though it can be diminished in the mind.
- 5) I threw away that hat.
 - 1) 3456
 - 2) 4567
 - 3) None of these

Question of the Day #51: (22-Jul-09)

In a game show the contestants are required to search and hit six buzzers which are placed inside a hexagonal hall having six gates. The below given figure gives an idea about the hall but the contestants are unaware about the structure of the hall. They just know that they can enter and exit from any of the six gates. The first three contestants are good friends and decide which doors they will use and latch those doors in order to trouble other contestants. The first contestant enters from a door, latches it from inside, hits the buzzers and leaves from another door latching it from outside. The same is done by the other 2 contestants. The 4th contestant is a nice person, he enters by opening a door latched from outside, leaves it unlatched, hits the buzzers and leaves by opening a door latched from inside without latching it from outside. The 5th contestant comes to know that some doors are latched, hence he even latches the doors which he uses i.e. if he comes across a latched door and he can open it he uses it and latches it from other side and if he moves through an unlatched door he latches it after using it. Now the 6th contestant starts. If he picks a door at random to enter what is the probability that he will be able to enter through that door?



OPTIONS

- 1) $\frac{5}{12}$
- 2) $\frac{1}{3}$
- 3) $\frac{7}{12}$
- 4) $\frac{1}{6}$
- 5) Cannot be determined

Question of the Day #52: (23-Jul-09)

The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

The tech scene may seem to be going a little out of hand, if you will, with big brother Microsoft teeming with activity all over again. If the word 'Windows' had started sounding like the anti-thesis of innovation to you by now, it's time to shake up and wake up a bit. Microsoft is once again trying to change the rules of many games simultaneously. Catch the software giant's many fingers in different pies - in operating systems with Windows 7, search engines with Bing, and of course in gaming with the new Xbox 360 console that would eventually become a one-stop-shop for your gaming, social networking and communications needs. _____.

OPTIONS

- 1) Good or bad there is great activity for sure in Billy's kitchen.
- 2) It is an elaborate spread after a somewhat long innovation famine.
- 3) It's official that great things are cooking at Microsoft.
- 4) The new Microsoft hasn't left anything for competition.
- 5) That would have meant significant expenditure.

Question of the Day #53: (24-Jul-09)

$$f(n + 2) = \frac{f(n + 1) + 1}{f(n)}$$

for all integral values of n and $f(n) \neq 0$.

What is the least value of p for which $f(n + p) = f(n)$?

OPTIONS

- 1) 7
- 2) 8
- 3) 9
- 4) 10
- 5) None of these

Question of the Day #54: (25-Jul-09)

The following question has a paragraph from which the first sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

_____. There are only local issues being debated in state after state. There is hardly any overarching national theme being articulated by the Lok Sabha aspirants. It is true that local development themes — bijli, sadak, paani — do dominate the discourse in most parts of India. However, it now appears there simultaneously exists a silent undercurrent, even a mini-wave, at the national level in favour of the Congress party simply on the "stability and continuity" plank. This "stability and continuity" plank encompasses many narratives.

OPTIONS

- 1) The Congress government at the centre has a big challenge in the years ahead.
- 2) Indian politics seems to have reached a point where the electorate seems to be uninterested in national issues.
- 3) It is a positive development bound to improve the delivery mechanism for public goods.
- 4) India's politics seems to have reached a point where the local appears to have subsumed the national.
- 5) Political parties at the Centre and states will have to compete to deal with the changing politics of aspiration.

Question of the Day #55: (26-Jul-09)

How many sequences of 5 natural numbers (a, b, c, d, e) exist such that $abcde \leq a + b + c + d + e \leq 10$?

OPTIONS

- 1) 80
- 2) 90
- 3) 115
- 4) 116
- 5) 105

Question of the Day #56 (27-Jul-09)

The following question has a paragraph from which the first sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

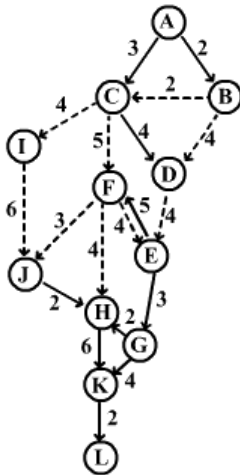
_____. Cows have digestive bacteria in their stomachs that cause them to belch methane, the second most significant heat-trapping gas after carbon dioxide. Although it is far less common in the atmosphere than carbon dioxide, it has 20 times the heat-trapping ability. Frank Mitloehner, a professor who places cows in air-tight tent enclosures and measures what he calls their “eruptions,” says the average cow expels 200 to 400 pounds of methane per year. More broadly, with worldwide production of milk and beef expected to double in the next 30 years, the United Nations has called livestock one of the most serious near-term threats to the global climate. In a 2006 report that looked at the environmental impact of cows worldwide, including forest-clearing activity to create pasture land, it estimated that cows might be more dangerous to the earth’s atmosphere than trucks and cars combined.

OPTIONS

- 1) Sweetening cow breath is a matter of some urgency, climate scientists say.
- 2) Chewing her cud on a recent sunny morning, Libby, a 630-kg Holstein, paused to do her part in the battle against global warming, emitting a fragrant burp.
- 3) Cows in America accounts for 20 per cent of the country’s emissions of heat-trapping gases.
- 4) Changes in feed have been the most promising in reducing the methane belched by cows.
- 5) Making cows belch less is a matter of some urgency, climate scientists say.

Question of the Day #57: (28-Jul-09)

There are 12 cities A – L connected via State highways (denoted by arrows) and Expressways (denoted by dotted arrows) as shown in the diagram below, where the arrow denotes the path between two cities and the number on the arrow denotes the time taken in hours by the person to travel from one city to another through that path:



- A person goes from A to L. His car consumes 4 litres of fuel per hour and has a full tank with a capacity of 30 litres of fuel (1 litre costs Rs. 50). He knows that there is no fuel available on any of the paths between any two cities. Also he needs to fill up the entire tank while refuelling, except in city K.
- It is known that there is a toll of Rs. 50 per vehicle on the state highway while the expressways have a toll of Rs. 120 per vehicle.
- He takes a break of 15 minutes at every fuelling station that he stops at.

What route will be cheapest if he wants to reach city L latest by 1:30 am on 25th June and starts at 5 am on 24th June?

OPTIONS

- 1) A – C – D – E – G – K – L
- 2) A – B – C – F – E – G – H – K – L
- 3) A – B – D – E – G – K – L
- 4) A – B – D – E – F – H – K – L
- 5) None of these

Question of the Day #58: (29-Jul-09)

The following question has a paragraph from which the first sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

____. Even the latest radar equipment can reach out no more than 550 kilometres (300 nautical miles) from land. Once out of radar range, pilots flying intercontinental routes make scheduled radio contact every half an hour or so with air-traffic control stations, behind or ahead of them, to report their positions. The rest of the time, no one knows exactly where they are. A number of countries, especially those surrounded by oceans or by vast expanses of rugged wilderness are none too happy with this. America, Australia and Canada have been among the most active proponents of satellite navigation for commercial aircraft.

OPTIONS

- 1) Aeroplanes need satellite navigation even more than anything else.
- 2) Knowing the plane location while they are flying over oceans is only half the problem.
- 3) Flying over oceans is one of the challenges of new air-traffic control technology.
- 4) One of the hazards of flying over oceans is the lack of radar coverage.
- 5) Some airline companies are planning to provide internet access to the passengers.

Question of the Day #59: (30-Jul-09)

In how many ways can 111 be written as the sum of three distinct integers in geometric progression?

OPTIONS

- 1) 2
- 2) 3
- 3) 4
- 4) 5
- 5) None of these

Question of the Day #60: (31-Jul-09)

The following question has a paragraph from which the first sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

_____. Neither is unique to humans, but Homo sapiens have both in an abundance missing from other species. Indeed, that abundance—of concern for the well-being of others, (even unrelated others), and of finely crafted material objects both useful and ornamental—is seen by many as the mark of man, as what distinguishes humanity from mere beasts. How these human traits evolved is controversial.

OPTIONS

- 1) Two of the most peculiar things about people are morality and culture.
- 2) Two of the oddest things about mankind are violence and morality.
- 3) Two of the most peculiar things about people are intelligence and war.
- 4) Two of the oddest things about men are science and culture.
- 5) Two of the oddest things about people are love and art.

Question of the Day #61: (01-Aug-09)

A sequence of positive real numbers satisfies the following relations:

$$\frac{x_1}{x_1 + 1} = \frac{x_2}{x_2 + 3} = \frac{x_3}{x_3 + 5} =$$

$$\dots = \frac{x_{2009}}{x_{2009} + 4017} \text{ and}$$

$$x_1 + x_2 + x_3 + \dots + x_{1005} = 2010$$

Find x_{25}

OPTIONS

- 1) 25
- 2) $\frac{98}{1005}$
- 3) $\frac{10}{210}$
- 4) $\frac{101}{1005}$
- 5) $\frac{20}{201}$

Question of the Day #62: (02-Aug-09)

Answer the question based on the information given in the passage.

A tomato has been engineered to contain higher levels of a chemical which may offer protection against cancer. Tomatoes, even in their processed form, are already considered to be beneficial to health. This is because they contain various antioxidant chemicals which may be able to prevent cell damage in the body. One of these chemicals is called lycopene, the pigment which gives the fruit its traditional red colour. The new tomato strain developed by scientists at Purdue contains on average between two and three and a half times the lycopene of the average tomato.

The scientists at Purdue assume that

OPTIONS

- 1) The higher the ingestion of lycopene in its natural form the better the prevention of cell damage.
- 2) Consumption of lycopene as a drug does not have the same effect in the prevention of cell damage.
- 3) Lycopene is more beneficial to health when it is contained in tomatoes that are genetically engineered.
- 4) It is easier to genetically engineer tomatoes with higher lycopene than other vegetables.
- 5) Other fruits and vegetables do not contain lycopene. The Advertising Standards Authority can decide on whether alternative medicine does what it claims to.

Question of the Day #63: (03-Aug-09)

A four digit number is called *peculiar* if the sum of the number formed by the first two digits and the last two digits is equal to the number formed by the middle two digits (Example 1978, $19 + 78 = 97$). If all *peculiar* numbers are arranged in ascending order, find the sum of *peculiar* numbers just before and after 1978.

OPTIONS

- 1) 4285
- 2) 2876
- 3) 3876
- 4) 4175
- 5) None of these

Question of the Day #64: (04-Aug-09)

While our understanding of the world is rapidly increasing, the answer to how life began on Earth remains elusive. Scientists see evidence of early life in ancient rocks. It is presumed that life arose in a warm soup rich in carbon compounds, but where did these organic molecules come from? The answer may lie in interstellar dust, and the possibility that a comet or asteroid may have provided Earth with the raw ingredients needed for life. Understanding how life emerged on Earth within 1,000 million years of its formation is both a fascinating scientific problem and an essential step in predicting the presence of life elsewhere in the Universe.

Which of the following has to be true if the hypothesis (about how life began on earth) mentioned above has to be true?

OPTIONS

- 1) Life had originated and existed elsewhere in the universe.
- 2) Life really began in hot volcanic springs on the ancient earth.
- 3) The first cells were not living cells but inorganic ones formed at the bottom of the oceans.
- 4) Chemical reactions in the Earth's most ancient atmosphere produced inorganic molecules.
- 5) Living systems on earth originated in the small compartments in iron sulphide rocks.

Question of the Day #65: (05-Aug-09)

Ram is writing all the natural numbers (starting from 1) in order. He is to stop as soon as he has used any one digit 119 times. What is the sum total of the numbers he has written by the time he stops?

OPTIONS

- 1) 16110
- 2) 16290
- 3) 16471
- 4) 16653
- 5) None of these

Question of the Day #66: (06-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

Confusingly, rent has two different meanings for economists. The first is the commonplace definition: the income from hiring out land or other durable goods. The second, also known as economic rent, is a measure of market power: the difference between what a factor of production is paid and how much it would need to be paid to remain in its current use. A soccer star may be paid \$50,000 a week to play for his team when he would be willing to turn out for only \$10,000, so his economic rent is \$40,000 a week. In perfect competition, there are no economic rents, as new firms enter a market and compete until prices fall and all rent is eliminated.

OPTIONS

- 1) The two types of rent are: the income from hiring and the excess payment above that required to induce production. Competitive markets eliminate economic rent.
- 2) Rent is the income from hiring; in economics rent is the excess payment above that required to induce production, which competitive markets eliminate.
- 3) The two types of rent in economics are: the income from hiring and the excess payment made for production. Perfect competition eliminates the latter.
- 4) Rent has two different meanings: ordinary definition and economic rent. Economic rent is eliminated in perfect competition as new firms enter and compete.
- 5) Rent is the income from hiring; in economics rent is the excess payment above that required to induce production. Perfect competition eliminates economic rent.

Question of the Day #67: (07-Aug-09)

The question below is followed by two statements, A and B. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement A alone but not by using statement B alone.

Mark (2) if the question can be answered by using statement B alone but not by using statement A alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

50 numbers are chosen from the set $\{1, 2, 3, \dots, 99\}$. Find the sum of the numbers?

- A. No two numbers sum up to 99.
- B. No two numbers sum up to 100.

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #68: (08-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

Human beings and chimpanzees are closely related genetically, but because of historic differences in environment, the behaviour of humans is, in many ways, more like that of wolves, which experience many problems similar to those of ancient man. Such convergences and divergences are commonplace in biological evolution. Convergence occurs when unrelated animals independently evolve similar responses to similar environmental conditions- e.g., the similar body shapes of porpoises and sharks; the similar social behaviour of wolves and humans. Divergence occurs when closely related species are adapted to different conditions, with a resultant difference in behaviour and structure. This is the usual type of response; sometimes, however, divergence is extreme enough to obscure a close relationship. The males of many species of closely related hummingbirds, birds of paradise, pheasants, and ducks, for example, are superficially so different from one another that many of these species were formerly assigned to different genera.

OPTIONS

- 1) In evolution the convergence of structure and biology occurs when unrelated animals evolve similar responses to similar environmental conditions and divergence occurs when unrelated animals evolve similar responses to similar environmental conditions.
- 2) In evolution the divergence of animal behaviour and biology occurs when unrelated animals evolve similar responses to similar environmental conditions and convergence occurs when unrelated animals evolve similar responses to similar environmental conditions.
- 3) In evolution the convergence of animal behaviour and biology occurs when related animals evolve dissimilar responses to dissimilar environmental conditions and divergence occurs when unrelated animals evolve similar responses to similar environmental conditions.
- 4) In evolution the convergence of animal behaviour and biology occurs when unrelated animals evolve similar responses to dissimilar environmental conditions and divergence occurs when related animals evolve dissimilar responses to similar environmental conditions.
- 5) In evolution the convergence of behaviour and biology occurs when unrelated animals evolve similar responses to similar environmental conditions and divergence occurs when related animals evolve dissimilar responses to dissimilar environmental conditions.

Question of the Day #69: (09-Aug-09)

The function $f(A, B)$ is a function of two positive integers A and B . It is known that $f(1, 0) = f(0, 1)$, that $f(0, k) = k + 1$ (for natural number k) and that $f(A, B) = f(A - 1, f(A, B - 1))$. What is the value of $f(1, 1500)$?

OPTIONS

- 1) 1498
- 2) 1499
- 3) 1500
- 4) 1501
- 5) None of these

Question of the Day #70: (10-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

Animal Spirits is the colourful name that Keynes gave to one of the essential ingredients of economic prosperity: confidence. According to Keynes, animal spirits are a particular sort of confidence, "naive optimism". He meant this in the sense that, for entrepreneurs in particular, "the thought of ultimate loss which often overtakes pioneers, as experience undoubtedly tells us and them, is put aside as a healthy man puts aside the expectation of death". Where these animal spirits come from is something of a mystery.

OPTIONS

- 1) Animal Spirits, according to Keynes, is the mysterious and naive optimism that guides an entrepreneur.
- 2) Animal Spirits, according to Keynes, is the spontaneous optimism of an entrepreneur that makes him unmindful of the risks involved.
- 3) Animal Spirits, according to Keynes, is the confidence of an entrepreneur that helps him put aside the inevitable loss.
- 4) Animal Spirits, according to Keynes, is the spontaneous optimism of an entrepreneur that helps him put aside the thought of ultimate loss.
- 5) Animal spirits, according to Keynes, are a sort of irrational confidence that makes an entrepreneur postpone the thought of the ultimate loss.

Question of the Day #71: (11-Aug-09)

$$\text{Let } X = \frac{0!}{3!} + \frac{1!}{4!} + \frac{2!}{5!} + \frac{3!}{6!} + \dots + \frac{97!}{100!}$$

Which of these is equal to the value of X ?

OPTIONS

- 1) $\frac{4900}{99000}$
- 2) $\frac{1}{4}$
- 3) $\frac{4949}{19800}$
- 4) $\frac{2}{9}$
- 5) None of these

Question of the Day #72: (12-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

That Kabir’s early life began as a Muslim there is no doubt, although he later became influenced by a Hindu ascetic, Ramananda. Kabir, instead of choosing the Hindu religion or Islam, took what seemed to him to be the best tenets of both and preached his own religion, called sahaja-yoga (“simple union”). He thus became the forerunner of a number of cults, of which Kabirpanth is the most important, as well as of a separate religion, Sikhism. From Hinduism he accepted the ideas of reincarnation, or transmigration, and the law of karma, but he rejected idolatry, asceticism, and the caste system. From Islam he accepted the idea of one God and the equality of man before God. The ideas of the Muslim mystics, called Sufis, also influenced Kabir greatly.

OPTIONS

- 1) Kabir combined the best tenets of Hindu and Muslim religions to preach his own religion called sahaja-yoga – and became the forerunner of a number of cults including Sikhism.
- 2) Kabir combined the influences of Ramananda and Sufi masters in his own religion called sahaja-yoga and established a number of cults which became the forerunner of Sikhism.
- 3) Kabir combined the influences of Ramananda and Sufi masters in his own religion called sahaja-yoga and established a number of cults and founded Sikhism.
- 4) Kabir combined the best tenets of Hindu and Muslim religions to preach his own religion called sahaja-yoga – and became the forerunner of Sikhism.
- 5) Though the early influence on Kabir was that of Islam, and later that of Ramananda, Kabir chose to preach a new religion. He thus became the forerunner of Sikhism.

Question of the Day #73: (13-Aug-09)

How many two digit numbers give a perfect square when they are added to the number formed by reversing their digits?

OPTIONS

- 1) 0
- 2) 3
- 3) 5
- 4) 8
- 5) None of these

Question of the Day #74: (14-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the text.

From 1940 on, with the diffusion of Existentialism through continental Europe, its directions have developed in terms of the diversity of the interests to which they are subject: the religious interest, the metaphysical interest, the moral and political interest. This diversity of interests is rooted, at least in part, in the diversity of sources on which Existentialism has drawn. One such source has been the subjectivism of the 4th–5th-century theologian St. Augustine, who exhorted man not to go outside himself in the quest for truth, for it is within him that truth abides. “If you find that you are by nature mutable,” he wrote, “transcend yourself.” Another source has been the Dionysian Romanticism of Nietzsche, who exalted life in its most irrational and cruel features and made this exaltation the proper task of the “higher man,” who exists beyond good and evil. Still another source has been the nihilism of Dostoyevsky, who, in his novels, presented man as continually defeated as a result of his choices and as continually placed by them before the insoluble enigma of himself.

OPTIONS

- 1) The diversity of interests of Existentialism in religious, metaphysical, moral and political aspects of existence is rooted in parts in the subjectivism of St. Augustine, Dionysian Romanticism of Nietzsche, and the nihilism of Dostoyevsky.
- 2) As a consequence of the diversity of the sources from which Existentialist doctrines have been drawn, they focus on several aspects of existence.
- 3) As Existentialism has drawn from diverse sources like Subjectivism, Romanticism, and Nihilism the interests to which Existentialism is subject in Europe are also diverse.
- 4) The diversity of interests of Existentialism in religious, metaphysical, moral and political aspects of existence is rooted in the subjectivism of St. Augustine, Dionysian Romanticism of Nietzsche, and the nihilism of Dostoyevsky.
- 5) The diversity of interests of Existentialism in religious, metaphysical, moral and political aspects of existence is rooted in parts in the diversity of interests from which Existentialism has drawn.

Question of the Day #75: (15-Aug-09)

A tank has eight inlet taps to let water into the tank and four outlet taps to let water out of the tank. Each inlet tap can fill up the tank in 24 seconds, while each outlet tap takes 35 seconds to drain out the entire tank. If all the taps are opened for 4 seconds when the tank is empty, approximately what volume (in %) of the tank is filled?

OPTIONS

- 1) 87.5
- 2) 80
- 3) 95
- 4) It overflows
- 5) None of these

Question of the Day #76: (16-Aug-09)

The question below consists of a paragraph in which the first sentence is fixed and the sentences following it are jumbled. Choose from among the options the most logical order of the sentences.

- A. Z particle is a massive electrically neutral carrier particle of the weak force that acts upon all known subatomic particles. It is the neutral partner of the electrically charged W particle.
- B. For decades after that, it appeared that only charged weak messengers were necessary to account for all observed weak interactions. However, the attempts to produce a gauge-invariant theory of the weak force- i.e., a theory that is symmetrical with respect to transformations in space and time- suggested unifying weak and electromagnetic interactions.
- C. According to the Standard Model of particle physics, the W and Z particles are the gauge bosons that mediate the weak force responsible for some types of radioactive decay and for the decay of other unstable, short-lived subatomic particles.
- D. The concept that the weak force is transmitted by intermediary messenger particles arose following the successful description of the electromagnetic force in terms of the emission and absorption of photons.
- E. The Z particle has a mass of 91.19 gigaelectron volts nearly 100 times that of the proton. The W is slightly lighter, with a mass of 80.4 GeV. Both particles are very short-lived, having lifetimes of only about 10⁻²⁵ second.

OPTIONS

- 1) ECDB
- 2) EDCB
- 3) CDEB
- 4) CBDE
- 5) DBEC

Question of the Day #77: (17-Aug-09)

Which of the following numbers divides $23^4 + 18^2 + 72^2 + 2116^2$?

OPTIONS

- 1) 2
- 2) 3
- 3) 5
- 4) 7
- 5) None of these

Question of the Day #78: (18-Aug-09)

The question below consists of a paragraph in which the first sentence is fixed and the sentences following it are jumbled. Choose from among the options the most logical order of the sentences.

- A. The initial decline in U.S. output in the summer of 1929 is widely believed to have stemmed from tight U.S. monetary policy aimed at limiting stock market speculation.
- B. As a result, when a variety of minor events led to gradual price declines in October 1929, investors lost confidence and the stock market bubble burst. Panic selling began on "Black Thursday," October 24, 1929.
- C. The 1920s had been a prosperous decade, but not an exceptional boom period; prices had remained nearly constant throughout the decade, and there had been mild recessions in both 1924 and 1927.
- D. Some scholars believe that a boom in housing construction in the mid-1920s led to an excess supply of housing and a particularly large drop in construction in 1928 and 1929. By the fall of 1929, U.S. stock prices had reached levels that could not be justified by reasonable anticipations of future earnings.
- E. The one obvious area of excess was the stock market. Stock prices had risen more than fourfold from the low in 1921 to the peak in 1929. In 1928 and 1929, the Federal Reserve had raised interest rates in hopes of slowing the rapid rise in stock prices. These higher interest rates depressed interest-sensitive spending in areas such as construction and automobile purchases, which in turn reduced production.

OPTIONS

- 1) EDBC
- 2) DBEC
- 3) CEDB
- 4) DBCE
- 5) CEBD

Question of the Day #79: (19-Aug-09)

Let a, b be positive integers such that $a^2 - 2009b + 2b^2 = 0$. Find $a + b$.

OPTIONS

- 1) 1372
- 2) 588
- 3) 688
- 4) 784
- 5) 884

Question of the Day #80: (20-Aug-09)

The question below contains a paragraph with a missing sentence or part of a sentence. Choose the option that most logically completes the paragraph.

The prophecies of Nostradamus have given birth to much speculation. The major reason appears to be the coded, poetic format of his work. His work 'Century' remains cryptic to this day, in spite of many translations and research by different scholars. Now, hopes of demystifying the texts are resurfacing. _____.

OPTIONS

- 1) A scientist has calculated the exact day and date of Nostradamus' death.
- 2) The future is never fixed as Nostradamus had us to believe, instead it follows the whims of the Lord.
- 3) A folio containing Nostradamus' personal notes and calculations was apparently discovered in a Monastery deep in the Swiss Alps.
- 4) Modern research is increasingly using the internet and other electronic media in its pursuit of the truth.
- 5) Nostradamus' mysteries may soon be unraveled.

Question of the Day #81: (21-Aug-09)

Akshay is a strange liar. He lies on six days of a week, but on the seventh day he always tells the truth. He made the following statements on three consecutive days.

Day 1: "I lie on Monday and Tuesday."

Day 2: "Today, it's Thursday, Saturday, or Sunday."

Day 3: "I lie on Wednesday and Friday."

On which day does Akshay tell the truth?

OPTIONS

- 1) Monday
- 2) Tuesday
- 3) Wednesday
- 4) Thursday
- 5) Friday

Question of the Day #82: (22-Aug-09)

Given the current scares just as the tourism season is hotting up- from attacks on Indians in Australia to the threat of swine flu in North America- there is even more reason for a 'staycation'. And we are lucky that India has such a diversity of destinations to offer, from cool climes to sultry sands. It's just that we don't know how much our own country has to offer. Think about it- there's nothing we lack- horseshoe falls a la Niagara in Chhattisgarh, a crater like Tanzania's Ngorongoro near Aurangabad, coral reefs in Lakshadweep, Francophone charm in Pondicherry, prehistoric paintings in Bhimbetka, frescoes surpassing the Sistine Chapel in Ajanta, snowcaps higher than Switzerland in Himachal, orchid-studded rainforests in Arunachal, cherry blossoms like Tokyo's in Sikkim...the list is endless.

The writer assumes which of the following?

OPTIONS

- 1) There is no better place in the world to discover than India.
- 2) There is no reason to travel to other destinations for a vacation.
- 3) India offers world class tourist destinations.
- 4) Indians tourists are likely targets for racist attacks in Australia.
- 5) In India, people need not take a vacation.

Question of the Day #83: (23-Aug-09)

There are 64 identical cubes numbered 1 to 64. The number of a cube is written on all its faces i.e. for a cube numbered 15, 15 is written on all its six faces. If all these 64 cubes are joined together to form a single large cube, then the sum of all the numbers that appear on the faces of the larger cube is at least how much?

OPTIONS

- 1) 2160
- 2) 2060
- 3) 2130
- 4) 2090
- 5) None of these

Question of the Day #84: (24-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the text.

Abatement in law is the interruption of a legal proceeding upon the pleading by a defendant of a matter that prevents the plaintiff from going forward with the suit at that time or in that form. Pleas in abatement raise such matters as objections to the place, mode, or time of the plaintiff's claim. At one time, abatement of proceedings in equity differed from abatement in law in that the former merely suspended the action, subject to revival when the defect was cured, whereas the latter terminated it, though the plaintiff could start the action anew.

OPTIONS

- 1) Abatement in law is the termination of the proceedings until re-initiated by the plaintiff; abatement in equity suspends the proceedings until the defect is cured.
- 2) Abatement in law suspends the proceedings until the defect is cured or re-initiated by the plaintiff.
- 3) Abatement in law is the cessation of proceeding at the instance of the defendant; abatement in equity suspends the proceedings until the defect is cured.
- 4) Abatement in law is the termination of proceeding at the instance of the plaintiff and may be re-initiated by the defendant; abatement in equity suspends the proceedings until the defect is cured.
- 5) Abatement is the legal termination of proceeding at the instance of the plaintiff and may be re-initiated by the defendant; abatement in equity suspends the proceedings until the defect is cured.

Question of the Day #85: (25-Aug-09)

Bini and Vini play a game of words using an unbiased die. They have defined a word simply as a collection of letters. If the outcome of throwing the die is 1, 3 or 5, odd numbered letters of the alphabet are selected, while if it is 2, 4 or 6, even numbered letters of the alphabet are selected. The objective is to make words from the letters so selected. In two turns, Bini threw the die twice and did not get a composite number in any of the throws. Every time she threw the die, she first formed all the words possible, returned the letters of the alphabet that were selected, and only then threw the die again. From the letters she could select, she decided to make a 3-letter word containing three different letters including atleast one vowel. How many words of this kind did she make?

OPTIONS

- 1) 0
- 2) 1380
- 3) 2760
- 4) None of these
- 5) Cannot be determined

Question of the Day #86: (26-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the paragraph.

Avoiding deforestation means that many landowners must forgo the right to cut down their trees, so that the world at large can benefit. As such, carbon emissions from deforestation are a classic example of “environmental externality”. So long as this remains the case, forests will continue to be cut down. To resolve the problem, it has been suggested that the people who forgo their rights are compensated. There is already a market for what are called “voluntary” credits in avoided deforestation.

OPTIONS

- 1) The existing market for “voluntary” credits in avoided deforestation is an effective way to internalise the “environmental externality” in environmental economics.
- 2) The existing market for “voluntary” carbon credits in avoided deforestation compensates the landowners and resolves the problem of deforestation by the landowners and reduces carbon emissions.
- 3) In order to decrease carbon emissions from deforestation landowners must be compensated for not cutting down trees, and the market for “voluntary” carbon credits must be strengthened.
- 4) The existing market for “voluntary” carbon credits in avoided deforestation compensates landowners and decreases carbon emissions from deforestation.
- 5) The existing market for “voluntary” carbon credits in avoided deforestation could be one of the ways to resolve deforestation by the landowners, and decrease carbon emissions from deforestation.

Question of the Day #87: (27-Aug-09)

If N is a seven digit natural number such that when it is added to the sum of its own digits the result is the least eight digit number. What is the remainder when N is divided by 9?

OPTIONS

- 1) 0
- 2) 5
- 3) 9
- 4) 1
- 5) 3

Question of the Day #88: (28-Aug-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the text.

That people have personalities goes without saying. There are the shy, the cruel, the kind, and the sceptical. And, it is hardly uncommon to hear a dog described as friendly or inquisitive. Scientific research has confirmed that dogs do indeed have personality traits similar to those found in people. In dogs, for instance, these are usually referred to as energy-level, affection-aggression, anxiety-calmness and intelligence-stupidity; in people they are extroversion, agreeableness, neuroticism, openness to experience and conscientiousness. Yet in spite of all this, rather little has been done to find out if such characteristics exist in wild animals. Studies in Animal Behaviour show not only that some do but also that the presence of such traits is skewing the way data is collected by researchers.

OPTIONS

- 1) People and animals have personalities, but animal personalities are not recognized by scientific research.
- 2) Animals have personalities like humans. However scientific research so far has either ignored them or is biased against them.
- 3) Animals have personalities the way people have. However, scientific research in animal behaviour is not only inadequate but also biased.
- 4) Dogs have personalities just like people. However, scientific research ignores wild animals, and the data collected about animal behaviour by scientific research is skewed.
- 5) Scientific research has established that dogs have personality traits like those of people. Wild animal behaviour is not adequately studied and data collected is skewed.

Question of the Day #89: (29-Aug-09)

What is the sum of the first 46 prime numbers?

OPTIONS

- 1) 3266
- 2) 3087
- 3) 4226
- 4) 3936
- 5) 4227

Question of the Day #90: (30-Aug-09)

The question below contains a number of sentences. Each sentence has pairs of word(s)/phrases that are highlighted. From the highlighted word(s)/phrase(s), select the most appropriate word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

1. In certain countries thievery is **equal (A) / equivalent (B)** to murder.
2. The jury would rather acquit **than (A) / then (B)** convict on the basis of flimsy evidence.
3. Maria is **older (A) / elder (B)** than Federico.
4. He has provided a **veracious (A) / voracious (B)** statement of facts as justification.
5. The police tried to **elicit (A) / illicit (B)** information from the suspect.

OPTIONS

- 1) AAAAA
- 2) ABAAB
- 3) BAAAB
- 4) BBBA
- 5) BAAAA

Question of the Day #91: (31-Aug-09)

If $\log_{x-4}(2x^2 - 14x + 21) \geq \log_{x-4}(x^2 - 16)$, then what is the range of values that x can take?

OPTIONS

- 1) $(-\infty, 7 - 2\sqrt{3}) \cup [7 + 2\sqrt{3}, \infty)$
- 2) $\left(\frac{7 + \sqrt{7}}{2}, 5\right)$
- 3) $[7 + 2\sqrt{3}, \infty)$
- 4) $\left(\frac{7 + \sqrt{7}}{2}, 5\right) \cup [7 + 2\sqrt{3}, \infty)$
- 5) None of these

Question of the Day #92: (01-Sep-09)

Each of the questions below contains a number of sentences. Each sentence has pairs of word(s)/phrases that are highlighted. From the highlighted word(s)/phrase(s), select the most appropriate word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

1. He **caste (A)** / **cast (B)** his remarks to suit the occasion.
2. Cricket matches these days also employ the services of **clagues (A)** / **clacks (B)** in the form of cheerleaders.
3. Those obscure forces of nature were personified by the Greeks in shapes part human and part beast, the satyr and the **faun (A)** / **fawn (B)**.
4. They would have stripped off his stockings if his **greaves (A)** / **grieves (B)** had not prevented them.
5. The child looks pretty in a skirt that **flares (A)** / **flairs (B)** from the waist.

OPTIONS

- 1) BABAA
- 2) ABABB
- 3) BAAAA
- 4) ABABA
- 5) BAAAB

Question of the Day #93: (02-Sep-09)

Is it possible to find the average of the first $n - 1$ integers of a set of n integers?

- A. All n integers are in AP with a known value of common difference.
- B. The n integers are the n roots of the equation $x^n + Ax^{n-1} + Bx^{n-2} + \dots + K = 0$. The value of A is known.

OPTIONS

- 1) 1
- 2) 2
- 3) 3
- 4) 4
- 5) 5

Question of the Day #94: (03-Sep-09)

The question below contains a number of sentences. Each sentence has pairs of word(s)/phrases that are highlighted. From the highlighted word(s)/phrase(s), select the most appropriate word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

- 1. The professor was too obtuse (A) / abstruse (B) to realize that his remarks were offensive.
- 2. Their precipitous (A) / precipitate (B) entry into the foreign markets led to disaster.
- 3. It was yellowish brown and seemed coated with a rough and half-dry mucus (A) / mucous (B)
- 4. They reached a settlement after months of tortulous (A) / tortuous (B) negotiations.
- 5. I sought out the few friends I knew who might be able to get me work; but they were either uninterested (A) / disinterested (B) or unable to find anything for me.

OPTIONS

- 1) ABBAB
- 2) BABAA
- 3) ABABB
- 4) BABBA
- 5) ABABA

Question of the Day #95: (04-Sep-09)

The question below is followed by two statements, A and B. Answer the question using the following instructions:

Mark (1) if the question can be answered by using statement A alone but not by using statement B alone.

Mark (2) if the question can be answered by using statement B alone but not by using statement A alone.

Mark (3) if the question can be answered by using either of the statements alone.

Mark (4) if the question can be answered by using both the statements together but not by either of the statements alone.

Mark (5) if the question cannot be answered on the basis of the two statements.

Can we find a sequence of 1000 consecutive positive integers, in which there are exactly 5 prime numbers?

A. The sequence $A! + 2, A! + 3, \dots, A! + 1001$ has no prime numbers, ($A > 200$).

B. The sequence $B! + 1, B! + 2, \dots, B! + 1000$ has exactly 10 prime numbers, ($B > 200$).

OPTIONS

1) 1

2) 2

3) 3

4) 4

5) 5

Question of the Day #96: (05-Sep-09)

The question below contains a number of sentences. Each sentence has pairs of word(s)/phrases that are highlighted. From the highlighted word(s)/phrase(s), select the most appropriate word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

1. The woman was at first a little brief and sullen in her answers, but care for her family soon rendered her more **complaisant (A) / complacent (B)**.
2. The Patents Act provides an exhaustive code for determining who is entitled to the grant of a patent, the person entitled being the inventor or his/her successor in title, the inventor being the actual **devisor (A) / deviser (B)**.
3. Many of these holes are as round and as cleanly cut as if they had been made with an **auger (A) / augur (B)**.
4. No novelist has more magnificent power in dramatic scenes, as in the **climatic (A) / climactic (B)** series in 'Vanity Fair'.
5. The professor inserts a **caret (A) / carat (B)** to indicate that something needs to be inserted in the text.

OPTIONS

- 1) BAABB
- 2) AABBA
- 3) AAABA
- 4) BABAA
- 5) ABABB

Question of the Day #97: (06-Sep-09)

Aarav, who lived on Earth, went to Mars and met Jadoo, Badoo, Kadoo and Ladoo there. All four of them, who were residents of Mars, had some chocolates with them. On the arrival of Aarav, they became so happy that all of them gave away all their chocolates to Aarav. The number of chocolates with Jadoo, Badoo, Kadoo and Ladoo were 15, 40, $k01$ and 122 respectively as per the number system prevalent on their planet. They also told Aarav that the number of chocolates they had was in an arithmetic progression in the number system used on their planet. Aarav is an expert in number systems. If Aarav counts the chocolates that he received, which of the following values cannot be the number of chocolates counted by him?

OPTIONS

- 1) 122
- 2) 233
- 3) 442
- 4) 278
- 5) None of these

Question of the Day #98: (07-Sep-09)

The question below contains a paragraph followed by alternative summaries. Choose the option that best captures the essence of the text.

Nietzsche's early works *The Birth of Tragedy* and the four *Unzeitgemässe Betrachtungen* (1873; Untimely Meditations), are dominated by a Romantic perspective influenced by Schopenhauer and Wagner. The middle period, from *Human, All-Too-Human* up to *The Gay Science*, reflects the tradition of French aphorists. It extols reason and science, experiments with literary genres, and expresses Nietzsche's emancipation from his earlier Romanticism and from Schopenhauer and Wagner. In his mature writings Nietzsche was preoccupied by the origin and function of values in human life.

OPTIONS

- 1) Nietzsche's writings fall into three well-defined periods. Nietzsche's mature philosophy emerged after *The Gay Science* dealing with the origin and function of values in human life.
- 2) Nietzsche's writings fall into two well-defined periods; the Romantic perspective influenced by Schopenhauer and Wagner and the mature writings that followed *The Gay Science*.
- 3) Nietzsche's writings fall into three well-defined periods- the Romantic perspective of Schopenhauer and Wagner; the one that reflects the tradition of French aphorists; and the mature preoccupation with human values.
- 4) Nietzsche's writings fall into two well-defined periods- the Romantic perspective influenced by Schopenhauer, Wagner and the tradition of French aphorists followed by the mature inquiry into the origin and function of human values.
- 5) Nietzsche's writings fall into well-defined periods- the Romantic perspective followed by Schopenhauer, Wagner and the tradition of French aphorists and the mature inquiry into the origin and function of human values.

Question of the Day #99: (08-Sep-09)

How many 10-digit positive integers with distinct digits are multiples of 11111?

OPTIONS

- 1) 1234
- 2) 2345
- 3) 3456
- 4) 4567
- 5) None of these

Question of the Day #100: (09-Sep-09)

The question below consists of a set of labelled sentences. These sentences, when properly sequenced, form a coherent paragraph. Choose the most logical order of sentences from among the options.

- A. I certainly hope they do – for their own sakes.
- B. Eventually, most were reduced to ‘goongi gudiyas’ – nothing more than decorative, token creatures, whose presence was always noted by waiting journos for the sartorial statements they were making, rather than statements on more vital issues relating to the welfare of women at large.
- C. We have always had a few truly extraordinary women parliamentarians but their voices have rarely been heard as emphatically as needed.
- D. Given the small numbers this time, I really don’t know how strong or effective a body these ladies will make in parliament or even if they will speak in a cohesive voice.
- E. Whether it is Jayaprada, Priya or any other presentable M.P. references to their physical appearance are still obligatory.

OPTIONS

- 1) CBEDA
- 2) DACBE
- 3) DABEC
- 4) ACBED
- 5) BEDAC

SOLUTIONS

Solution #01: (02-Jun-09)

Given α, β are the roots of the equation $7x^2 - 5x + 2 = 0$

$$\therefore \alpha + \beta = \frac{5}{7} \text{ and } \alpha\beta = \frac{2}{7}$$

Since, the product of the roots is positive and their sum is also positive, therefore, both the roots are positive. Also, the sum is less than 1, therefore both the roots are less than 1.

Now, we use the formula for sum of infinite geometric progression, for positive common ratio < 1 .

$$\therefore (1 + \alpha + \alpha^2 + \alpha^3 + \dots \text{ up to } \infty)(1 + \beta + \beta^2 + \beta^3 + \dots \text{ up to } \infty)$$

$$= \left(\frac{1}{1 - \alpha}\right) \left(\frac{1}{1 - \beta}\right)$$

$$= \left(\frac{1}{1 - \beta - \alpha + \alpha\beta}\right)$$

$$= \frac{1}{1 - (\alpha + \beta) + \alpha\beta}$$

$$= \frac{1}{1 - \frac{5}{7} + \frac{2}{7}}$$

$$= \frac{7}{4}$$

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #02: (03-Jun-09)

The paragraph states that men working on building a railway were being attacked by lions and the native coolies were convinced that the spirits of two chiefs had taken this form to protest against a railway being built through their country. Thus, it can be inferred that the lions were not against humans building the railways, but against the building of the railway- an important distinction to take note of.

Option 1 is therefore incorrect because the attack on humans was not the way to seek revenge for the lions, but to somehow stop the railways from being built.

Options 3 and 4 contradict the paragraph.

Options 2 and 5 are close, option 2 scores over option 5 by mentioning 'stopping its progress' meaning the progress of the railways- not merely 'stopping work in the area'.

Hence, the correct answer is option 2.

[Discuss the solution with Testfunda users.](#)

Solution #03: (04-Jun-09)

$$p(4, 16) = p(5, 16) + p(4, 12) \quad \dots(i)$$

$$p(4, 12) = p(5, 12) + p(4, 8) \quad \dots(ii)$$

$$p(4, 8) = p(5, 8) + p(4, 4)$$

$$p(4, 4) = 1$$

Consider $p(5, 8)$,

$$p(5, 8) = p(6, 8) + p(5, 3)$$

$$p(5, 3) = 0 \quad (\because 3 < 5)$$

$$p(5, 8) = p(6, 8)$$

$$p(6, 8) = p(7, 8) + p(6, 2)$$

$$p(6, 2) = 0 \quad (\because 2 < 6)$$

$$p(6, 8) = p(7, 8)$$

Similarly, $p(7, 8) = p(8, 8) = 1$

$$\therefore p(5, 8) = 1$$

$$p(4, 8) = p(5, 8) + p(4, 4) = 1 + 1 = 2 \quad \dots(iii)$$

$$p(5, 12) = p(6, 12) + p(5, 7)$$

Consider $p(6, 12)$,

$$p(6, 12) = p(7, 12) + p(6, 6)$$

$$p(6, 6) = 1$$

$$p(7, 12) = p(8, 12) + p(7, 5)$$

$$p(7, 5) = 0 \quad (\because 5 < 7)$$

Continuing in the same manner as above we get,

$$p(7, 12) = 1$$

$$p(5, 7) = p(6, 7) + p(5, 2)$$

$$p(5, 2) = 0 \text{ and } p(6, 7) = 1$$

$$\therefore p(5, 7) = 1$$

$$\therefore p(6, 12) = p(7, 12) + p(6, 6) = 1 + 1 = 2$$

$$p(5, 12) = p(6, 12) + p(5, 7) = 2 + 1 = 3 \quad \dots(iv)$$

Substituting (iii) and (iv) in (ii) we get,

$$p(4, 12) = 2 + 3 = 5 \quad \dots(v)$$

Similarly we can find, $p(5, 16) = 6 \quad \dots(vi)$

Substituting (v) and (vi) in (i), we get,

$$p(4, 16) = 11$$

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #04: (05-Jun-09)

Option 1 is judgmental as it refers to civilization as a 'farce'.

Option 2 talks about 'problems' not mentioned in the paragraph.

Option 4 is advisory as it mentions- don't vanquish nature.

Option 5 is advisory too as it suggests that man should embrace nature as well as his fellow creatures.

Option 3 captures the gist of the paragraph.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #05: (06-Jun-09)

$$\text{Given } \sqrt{x} + \sqrt{x - \sqrt{1-x}} = 1$$

On rearranging the equation, we get,

$$\sqrt{x - \sqrt{1-x}} = 1 - \sqrt{x}$$

On squaring both the sides, we get,

$$x - \sqrt{1-x} = 1 + x - 2\sqrt{x}$$

$$\therefore -\sqrt{1-x} = 1 - 2\sqrt{x}$$

On squaring both the sides, we get,

$$1 - x = 1 + 4x - 4\sqrt{x}$$

$$\therefore 4\sqrt{x} = 5x$$

On squaring both the sides, we get,

$$16x = 25x^2$$

$$\therefore x(25x - 16) = 0$$

\therefore Either $x = 0$ or $25x - 16 = 0$

But $x \neq 0$, because x is positive.

$$\therefore x = \frac{16}{25} = 0.64$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #06: (07-Jun-09)

Option 1 is incorrect because there is no justification that impressionists were an “odd bunch with artists of all extremities forming the group”. Also Renoir was not a pure impressionist.

Option 2 is incorrect because both Renoir and Manet were not pure impressionists.

Option 4 is incorrect because “pure impressionists were the only true impressionists” is not mentioned in the paragraph.

Option 5 is incorrect because “in the face of criticism from its proponents, impressionists were consistent in their pursuit of an art of spontaneity, sunlight, and colour” is inconsistent with what has been mentioned in the paragraph.

Option 3 is correct because it summarizes all the main ideas of the paragraph.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #07: (08-Jun-09)

The speed of the rail engine is 42 km/hr when no compartment is attached.

Now, the reduction in speed (say Δv) is directly proportional to the square root of the number of compartments (say n) attached.

$$\therefore \Delta v \propto \sqrt{n}$$

$$\therefore \Delta v = k\sqrt{n}$$

[Here, k is some positive constant]

\therefore Reduction in speed of the train (Δv) = $42 - 24 = 18$ km/hr when 9 compartments are attached to the rail engine, so we get,

$$18 = k\sqrt{9}$$

$$\therefore k = 6$$

Let the number of compartments attached be x , when the speed of the engine reduces to zero. Therefore, reduction in speed of the rail engine = $42 - 0 = 42$ km/hr

$$\therefore 42 = k\sqrt{x}$$

$$\therefore 42 = 6\sqrt{x}$$

$$\therefore x = 49$$

But when 49 compartments are attached, the speed of the engine reduces to zero,

\therefore Maximum number of compartments should be one less than 49, i.e. 48, so that the rail engine can move.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #08: (09-Jun-09)

This can be added as an extra premise to the whole argument. For example, the statement can read: A stupid man's report of what a clever man says can never be accurate, because he unconsciously translates what he hears into something he can understand, and a stupid person can report only what he understands. None of the other options can act as an assumption required to make the statement true.

Option 5 is incorrect because the statement only says he cannot report accurately, it does not say that he cannot report at all.

Option 1 cannot be deciphered from the statement as to whether 'stupidity' and 'cleverness' are 'relative' or absolute.

Similarly, options 2 and 3 cannot be implied from the statement.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #09: (10-Jun-09)

$$\text{Given } \frac{9x^2}{(1 - \sqrt{1 + 3x})^2} = 3x + 11$$

On rationalizing the denominator of the LHS, we get,

$$\frac{9x^2}{(1 - \sqrt{1 + 3x})^2} \times \frac{(1 + \sqrt{1 + 3x})^2}{(1 + \sqrt{1 + 3x})^2} = 3x + 11$$

$$\therefore \frac{9x^2(1 + \sqrt{1 + 3x})^2}{(1 - (1 + 3x))^2} = 3x + 11$$

$$\therefore \frac{9x^2(1 + \sqrt{1 + 3x})^2}{9x^2} = 3x + 11$$

$$\therefore (1 + \sqrt{1 + 3x})^2 = 3x + 11$$

$$\therefore 1 + (1 + 3x) + 2\sqrt{1 + 3x} = 3x + 11$$

$$\therefore 2\sqrt{1 + 3x} = 9$$

$$\therefore \sqrt{1 + 3x} = \frac{9}{2}$$

$$\therefore 1 + 3x = \frac{81}{4}$$

$$\therefore x = \frac{77}{12}$$

Hence, option 1

[Discuss the solution with Testfunda users.](#)

Solution #10: (11-Jun-09)

Option 1 strengthens the case because the charges are discrimination and stereotyping.

Option 2 is not a sufficient reason to bar Garcia or to weaken his case.

Option 3 is does not weaken his case that since no woman complains, therefore he should not as well nor does it prevent him from complaining.

Option 5 seems to weaken his case, but it does not address the issues raised by Garcia.

Option 4 weakens his case because if it is meant to honour housewives, men will first have to prove that they are 'housewives'- the generally understood meaning of the term housewife is that it is a woman confined to the house.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #11: (12-Jun-09)

Two digit number XY can be written as $10X + Y$.

Now $10X + Y = 7X + 3X + Y$

Since $7X$ is divisible by 7, $10X + Y$ i.e. the number XY will be divisible by 7, if $3X + Y$ is divisible by 7.

From statement A alone:

Given $X + Y = 7$

If $X = 7$ and $Y = 0$, then the number XY is divisible by 7.

If $X = 3$ and $Y = 4$, then XY is not divisible by 7.

Hence statement A alone is not sufficient.

From statement B alone:

Given $4X + 6Y$ is divisible by 7.

We know that $7X + 7Y$ is divisible by 7.

i.e. $4X + 3X + 6Y + Y$ is divisible by 7.

i.e. $(4X + 6Y) + (3X + Y)$ is divisible by 7.

Since $4X + 6Y$ is divisible by 7, we can conclude that $3X + Y$ is also divisible by 7.

Hence XY is divisible by 7.

So statement B alone is sufficient.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #12: (13-Jun-09)

The argument that needs to be strengthened is that the government should act on the issue of deciding what works and what does not in 'alternative medicine'.

Option 1 states that 'consumer protection laws' should be strengthened and does not directly address the argument of the pharmacologist that the government should first decide what works and what does not.

Option 2 states that 'alternative medicines do not work'- which has to be decided by the government.

Option 4 does not address the issue of 'alternative medicine'.

Option 5 like option 1 does not call for government intervention.

Option 3 strengthens the argument by stating that agencies 'constituted to licence conventional drugs', excuse homeopathy from proving whether it works at all. This calls for the need for government intervention to decide whether homeopathy- or alternative medicine- really works.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #13: (14-Jun-09)

Given that $\sqrt{5-x} - \sqrt{x+2} = \frac{5}{2}$

On squaring both the sides of the equation, we get,

$$5 - x + x + 2 - 2(\sqrt{5-x})(\sqrt{x+2}) = \frac{25}{4}$$

$$\therefore 2(\sqrt{5-x})(\sqrt{x+2}) = 7 - \frac{25}{4}$$

$$\therefore (\sqrt{5-x})(\sqrt{x+2}) = \frac{3}{8}$$

On squaring both the sides of the equation, we get,

$$\therefore (5-x)(x+2) = \frac{9}{64}$$

$$\therefore 5x + 10 - x^2 - 2x = \frac{9}{64}$$

$$\therefore x^2 - 3x - \frac{631}{64} = 0$$

$$\therefore x = \frac{\left(3 \pm \sqrt{9 + \frac{631}{16}}\right)}{2}$$

$$\therefore x = \frac{\left(3 \pm \sqrt{\frac{775}{16}}\right)}{2}$$

$$\therefore x = \frac{(12 \pm \sqrt{775})}{8}$$

$$\therefore x = \frac{12 \pm 5\sqrt{31}}{8}$$

$$\therefore \text{Positive } x = \frac{12 + 5\sqrt{31}}{8}$$

But, this value of x does not satisfy the given equation.

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #14: (15-Jun-09)

Option 5 attributes the cause of the decline of Afghanistan and Iraq to acts of terrorism rising from anti-west sentiments and ideologies. Thus, option 5 in effect attributes the cause of peace declining to factors other than economic downturn. The conclusion of the study states that it is economic downturn that has made the world more violent. The economic factors are not included in the case of Afghanistan and Iraq, hence this challenges the conclusion.

The other options, 1 to 4, support the conclusion. Thus, by process of elimination also, option 5 can be selected.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #15: (16-Jun-09)

Consider statement I alone:

$$M = (1 + 2)^n - 2n - 1$$

Since n is a natural number, using the binomial expansion formula for $n \geq 0$, $(1 + x)^n = {}^nC_0 + {}^nC_1x + {}^nC_2x^2 + \dots + {}^nC_nx^n$

$$\therefore M = (1 + 2)^n - 2n - 1 = (1 + 2n + {}^nC_2 \times 2^2 + \dots + {}^nC_n \times 2^n) - 2n - 1$$

$$= 2^2({}^nC_2 + {}^nC_3 \times 2 + \dots + {}^nC_n \times 2^{n-2})$$

So M is divisible by 4 (i.e. 2^2), if $n > 1$.

\therefore Statement I is sufficient to answer the question.

Consider statement II alone:

$$n^3 > 1, \text{ hence } n > 1.$$

Now, for fractional values of n , M will not be divisible by 4, whereas for integer values of n in the range given, M will be divisible by 4.

\therefore Statement II alone is not sufficient to answer the question.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #16: (17-Jun-09)

The purpose of the paragraph is to point out that traditional marketing models based on a need gap approach will not work with the youth as they have no need gap. Option 4 brings this paragraph to a smooth closure.

Option 1 and option 3 which may be considered (erroneously) for the answer states certain need-gaps – need for liberation and empowerment(option 1), and the need for legitimisation(option 3). The youth has no such need gaps.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #17: (18-Jun-09)

Suppose that 13 children transact with the 14th child. Each of them retains 2 of his own kind with himself and gives away 13 of his kind to the 14th child. The 14th child gives one chocolate of his kind in return to each of the 13 children. So, now the 14th child has 2 chocolates of his kind and 13×13 chocolates of 13 different kinds. The 13 children have 2 chocolates each of their own kind and 1 chocolate each of the 14th kind.

Next, the 14th child takes away 14 chocolates from the 15th child and gives him one chocolate each of the 14 kinds that he has. So, now the 14th and 15th children have all the 15 kinds of chocolates.

Now, again the 14th child transacts with each of the 13 children and gives them one chocolate each of the 13 kinds that they do not have and takes one chocolate each of their own kind from them.

Now all the children have all the 15 kinds of chocolates.

This kind of exchange of chocolates gives the minimum number of transactions.

The total number of transactions here = $13 + 1 + 13 = 27$

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #18: (19-Jun-09)

Option 1 is incorrect for the generalisation about the car industry; they are Detroit's big three.

Option 2 and option 3 are possibilities; they are not conclusive – the question is not about inferences, but about what can be validly concluded – they cannot be validly concluded.

Option 4 is likely but not conclusive as GM's bankruptcy depends on an 'if'.

Option 5 is well supported by the paragraph and especially by the first line of the paragraph – the paragraph is written in order to explain the conclusion.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #19: (20-Jun-09)

$$\because |x^2 - y^2| = n$$

$$\because |(x + y)(x - y)| = n$$

It is very clear that statement I is necessary to answer the question, because statements II or III alone or II and III together are not sufficient to answer the question.

Therefore let us consider different cases taking statement I as true i.e. if it is given that $(x + y)$ is odd.

Case 1:

If $x = 3$ and $y = 2$, $(x + y) = 3 + 2 = 5$ (odd)

$$\therefore (x - y) = 3 - 2 = 1 \text{ and } n = |(x + y)(x - y)| = |5 \times 1| = 5 \text{ (odd)}$$

Case 2:

If $x = 1.5$ and $y = 1.5$, $(x + y) = 1.5 + 1.5 = 3$ (odd)

$$\therefore (x - y) = 1.5 - 1.5 = 0 \text{ and } n = |(x + y)(x - y)| = |3 \times 0| = 0 \text{ (not an odd number)}$$

But, this case can be eliminated by statement II, i.e. if we take $x \neq y$.

Case 3:

If $x = 2.6$ and $y = 0.4$, $(x + y) = 2.6 + 0.4 = 3$ (odd)

$$\therefore (x - y) = 2.6 - 0.4 = 2.2 \text{ and } n = |(x + y)(x - y)| = |3 \times 2.2| = 6.6 \text{ (fraction, not an odd number)}$$

But, this case can be eliminated by statement III, i.e. if we take n as an integer.

Case 4:

If $x = 3.5$ and $y = 1.5$, $(x + y) = 3.5 + 1.5 = 5$ (odd)

$$\therefore (x - y) = 3.5 - 1.5 = 2 \text{ and } n = |(x + y)(x - y)| = |5 \times 2| = 10 \text{ (Even)}$$

We can see that, even if we consider all the three statements I, II and III together, case 1 and 4 are valid and giving different answers.

\therefore The question cannot be answered uniquely by using all the three statements I, II and III together.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #20: (21-Jun-09)

The purpose of the paragraph is to state the challenge of making 'animal rights issue get an important role in politics' – the challenge is because 'tigers, buffaloes and birds don't have any votes'. Option 1 explicitly addresses both the issues and closes the paragraph. The sentence immediately next to the last states the "potential to protect wild life". Now "In addition" what else can it do? Option 1 fits the bill – it can attract political interest – the challenge can be met. Option 2 is eliminated because of 'forefront'.

Option 3 is eliminated because mere 'mass mobilisation' is not the purpose of the paragraph.

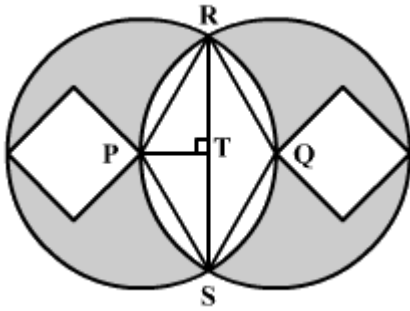
Option 4 is incorrect. Animal rights issue is already addressed in the second last sentence as 'actually protect wildlife.' – It cannot become an important issue in politics unless politicians are involved.

Option 5 too is logically abrupt and 'whole attention' eliminates it.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #21: (22-Jun-09)



We will first find the area of the sector P-RQS and then subtract the area of ΔPRS from it so that we can get the area of the segment RQSR.

In ΔPRT , $PR = 2a$ and $PT = a$
 $\therefore m\angle PRT = 30^\circ$ and $m\angle RPT = 60^\circ$

$$\therefore RT = \frac{\sqrt{3}}{2} \times PR = \frac{\sqrt{3}}{2} \times 2a = \sqrt{3}a$$

$$\therefore RS = 2 \times RT = 2\sqrt{3}a$$

\therefore Area of segment RQSR = Area of sector P-RQS – Area of ΔPRS

$$= \frac{120}{360} \times \pi(2a)^2 - \frac{1}{2} \times 2\sqrt{3}a \times a$$

$$= \frac{4\pi}{3} \times a^2 - \sqrt{3}a^2$$

$$= \left[\frac{4\pi}{3} - \sqrt{3} \right] a^2$$

Also, Diagonal of the square = Radius of circle

\therefore Diagonal of the square = $2a$

\therefore Side of the square = $\sqrt{2}a$

$$\text{Area of square} = (\sqrt{2}a)^2 = 2a^2$$

Area of shaded region = $2 \times [\text{Area of the circle} - \text{Area of the square} - 2 \times \text{Area of the segment RQSR}]$

$$= 2 \times \left[\pi(2a)^2 - 2a^2 - 2 \times \left[\frac{4\pi}{3} - \sqrt{3} \right] a^2 \right]$$

$$= \left[\frac{8\pi}{3} + 4(\sqrt{3} - 1) \right] a^2$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #22: (23-Jun-09)

Option 1 may explain why more young people are affected, but it will not explain the reverse pattern - hence is not adequate.

Option 2 is contrary to what is stated about swine flu.

If option 3 is true, more old people should suffer from swine flu.

If option 5 is correct, young people should not be affected by swine flu.

Option 4, if true, could explain why the old people are not affected – that their bodies have been used to ‘similar’ viruses’ – hence have certain immunity to these viruses.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #23: (24-Jun-09)

A short way of solving questions with inequalities is to substitute suitable values for the variables as per the conditions in the question and then as per the conditions given in the statements.

Using statement I alone:

n is an even number.

Taking $n = 2$, we get the L.H.S as $2!$ i.e. 2

On the right hand side we get, $\left(\frac{2+1}{2}\right)^x = \left(\frac{3}{2}\right)^x$

Now, if the value of x is 0, the value of the above expression becomes 1.

In such a case, $n! > \left(\frac{n+1}{2}\right)^x$

However, if the value of x is 2, the value of the R.H.S becomes 2.25

In such a case, $n! < \left(\frac{n+1}{2}\right)^x$

∴ Statement I is not sufficient to answer the question.

Using statement II alone:

$x = n$

Hence, we now need to compare $n!$ and $\left(\frac{n+1}{2}\right)^n$

Taking various integral values for n we get the following values for both the sides

n	$n!$	$\left(\frac{n+1}{2}\right)^n$
1	1	1
2	2	2.25
3	6	8
4	24	2.5^4
5	120	241

∴ Statement II is insufficient to answer the question.

Using both the statements:

The possible values of n are 2, 4, 6 and so on.

From the table in statement II we find that apart from the case when $n = 1$

$$n! < \left(\frac{n+1}{2}\right)^n$$

∴ Both the statements together are sufficient to answer the question.

Hence, option 4.

Alternatively,

Arithmetic Mean \geq Geometric Mean

∴ The Arithmetic Mean of the first n natural numbers \geq their Geometric mean

$$\therefore \frac{1+2+3+4+\dots+n}{n} \geq \sqrt[n]{1 \times 2 \times 3 \times 4 \times \dots \times n}$$

$$\therefore \frac{n(n+1)}{2n} \geq (n!)^{\frac{1}{n}}$$

$$\therefore \frac{n+1}{2} \geq (n!)^{\frac{1}{n}}$$

$$\therefore \left(\frac{n+1}{2}\right)^n \geq n! \quad \dots (i)$$

Using statement I alone:

n is an even number.

From equation (i), the given inequality will be true if $x \geq n$.

But we do not know the value of x .

\therefore Statement I is not sufficient to answer the question.

Using statement II alone:

$x = n$

$$\therefore \left(\frac{n+1}{2}\right)^x \geq n!$$

The equality holds when $x = n = 1$

\therefore Statement II is insufficient to answer the question.

Using both the statements:

$x = n$ and n is even,

$\therefore x > 1$

$$\therefore \left(\frac{n+1}{2}\right)^x > n!$$

\therefore Both the statements together are sufficient to answer the question.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #24: (25-Jun-09)

We need to first understand a critic has written the paragraph about Kallat's art and then uses probably one of his quotes to close the paragraph. "The urban milieu of Mumbai remains his primary muse..." the details are of this life are spelt out in the paragraph. An apt comment from the artist will explain this 'muse' of the artist. No other comment of the writer is directly related to what the critic has explained in the paragraph. In order to explain the influence of Mumbai life on the artist the critic uses the quote from the writer stated in option 5. No other option would help the critic this way.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #25: (26-Jun-09)

Equation of the circle is $x^2 + y^2 - 4x - 1 = 0$

$$\therefore x^2 + y^2 - 4x - 1 + 5 = 5$$

$$\therefore x^2 - 4x + 4 + y^2 = 5$$

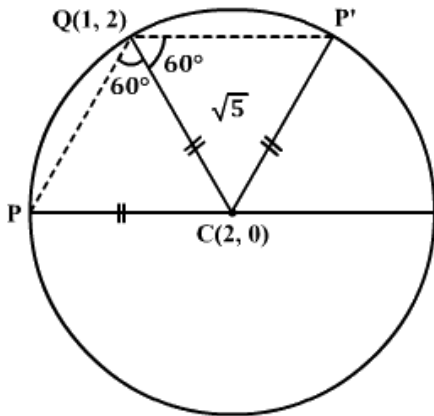
$$\therefore (x - 2)^2 + y^2 = (\sqrt{5})^2$$

Comparing the above equation with the general equation of a circle,

$(x - h)^2 + (y - k)^2 = r^2$, we get,

Centre of the circle $C \equiv (2, 0)$ and

Radius of the circle = $\sqrt{5}$ units



Now, as shown in the figure, point P can take positions, P and P'.

$$\ell(CP) = \ell(CP') = \ell(CQ)$$

$$\therefore \angle CQP' = \angle CP'Q \text{ and } \angle CQP = \angle CPQ$$

$$\text{But, } \angle CQP = \angle CQP' = 60^\circ$$

$$\therefore \angle CP'Q = \angle CPQ = 60^\circ$$

$\therefore \Delta CPQ$ and $\Delta CP'Q$ are equilateral triangles.

$$\therefore \ell(PQ) = \ell(P'Q) = \sqrt{5} \text{ units}$$

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #26: (27-Jun-09)

Since the experts clearly attribute the success (among other factors) to the ad campaigns of the winners - for focussing on 'positivity, inclusiveness, youthfulness, pan-India appeal' etc., option 1 is contrary and not the assumption.

The last sentence may justify option 2, but it is not the view of the 'political experts'.

Option 3 is clearly the assumption when they attribute the success (at least partly) to the ad campaigns.

Option 4, though true, is not an assumption in the analysis - instead it is the opinion of the author.

Option 5 is incorrect because the experts do not believe it (attributing success and failure in the elections to ad campaigns) is an oversimplification - they believe it contributed to the success.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #27: (28-Jun-09)

The largest possible 6-digit odd number is 999999.

From statement I alone,

The average of the first two odd prime numbers = $(3 + 5)/2 = 4$

$$\therefore (X/2)^2 = 4X$$

$$\therefore X = 16$$

$$\therefore \text{Sum of the digits of } X \text{ is } 1 + 6 = 7$$

Now we can find the remainder when 999999 is divided by 7.

[The remainder will be zero in this case, as every 6 digit number in which first three digits are same as last three digits is always divisible by 7, 11 and 13.]

Hence, statement I alone is sufficient.

From statement II alone,

We have many two digit numbers and we cannot find any unique answer.

Hence, statement II alone is not sufficient.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #28: (29-Jun-09)

Not a difficult choice if one notices the direction of the paragraph. Models were celebrities – then models were Bollywood and cricket stars – now they are little known but well remembered characters – hence, they are no longer celebrities or stars though one can still put a face to them (the face is remembered through the character).

'Great performance' in option 1 is an overstatement about ads.

Option 3 states that they are household names – which is not true.

Option 4 states 'they are quickly forgotten' which is not true.

'Cultures' and 'identities' in option 5 are irrelevant.

Hence, the correct answer is option 2.

[Discuss the solution with Testfunda users.](#)

Solution #29: (30-Jun-09)

Let P win a games and lose b games.

∴ Total number of games played by all three = a + b

Also, the total number of games won by P and Q will be b

Let Q win c games.

∴ Q loses (a + b - c) games.

R wins (a + b) - (a + c) = (b - c) games and loses (a + b) - (b - c) = (a + c) games.

∴ $5a - 3b = -20$... (i)

$5c - 3(a + b - c) = -12$

∴ $8c - 3a - 3b = -12$... (ii)

$5(b - c) - 3(a + c) = 12$

∴ $5b - 3a - 8c = 12$... (iii)

From (i) and (ii),

$c - a = 1$... (iv)

From (iii) and (iv),

$5b - 11a = 20$... (v)

From (i) and (v),

a = 5 and b = 15

∴ c = 6

∴ The three played 5 + 15 = 20 games in all.

Hence, option 2.

Alternatively,

If P, Q and R win p, q and r games respectively, they lose (q + r), (p + r) and (p + q) games respectively.

As a win gives 5 points and a loss -3 points,

$5p - 3q - 3r = -20$... (i)

$5q - 3p - 3r = -12$... (ii)

$5r - 3q - 3p = 12$... (iii)

Adding (i), (ii) and (iii),

$-p - q - r = -20$

∴ $p + q + r = 20$

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #30: (01-Jul-09)

Motivation of employees, and innovation of ideas (in HR) mentioned in the passage are for the purpose of “running a successful organisation”, which makes options 1 and 2 correct.

Option 3 is about market perceptions which are not within the scope.

Option 4 could be considered only if it was “motivated employees”.

The first 3 sentences of the paragraph indicate that options 1 and 2 are the basic assumptions in the argument.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #31: (02-Jul-09)

Perimeter of ABCD = length of arc AB + 6 + length of arc DC + 6 = 22 cm

∴ Length of arc AB + length of arc DC = 22 – 12 = 10 cm ... (i)

∴ Sector OAB and sector ODC are similar,

$$\therefore \frac{\text{length of arc AB}}{\text{length of arc DC}} = \frac{OA}{OD} = \frac{2}{2+6} = \frac{2}{8}$$

∴ From equation (i),

Length of arc AB = 2 cm and length of arc DC = 8 cm

Now, area of figure ABCD = area of sector ODC – area of sector OAB

$$= \frac{1}{2} \times 8 \times 8 - \frac{1}{2} \times 2 \times 2$$

$$= 32 - 2$$

$$= 30 \text{ cm}^2$$

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #32: (03-Jul-09)

“People walking in the streets look out for different things. ... Me, I look out for bananas . But not any bananas” This is where the writer breaks off to Cavendishes. The paragraph is incomplete unless we know what kind of bananas he is looking for. This makes option 4 the correct answer. The other options give more information about either the Cavendishes or the Americans; they do not fully close/complete the paragraph.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #33: (04-Jul-09)

We have, $\cos(x - y)$, $\cos x$, $\cos(x + y)$ are in H.P.
If three numbers a , b and c are in H.P. then,

$$b = \frac{2ac}{a + c}$$

$$\therefore \cos x = \frac{2 \times \cos(x - y) \times \cos(x + y)}{\cos(x - y) + \cos(x + y)}$$

$$\therefore \cos x = \frac{\cos 2x + \cos 2y}{2 \times \cos x \times \cos y}$$

$$\therefore \cos x = \frac{(1 + \cos 2x) - (1 - \cos 2y)}{2 \times \cos x \times \cos y}$$

$$\therefore \cos x = \frac{2 \times \cos^2 x - 2 \times \sin^2 y}{2 \times \cos x \times \cos y}$$

$$\therefore \cos x = \frac{\cos^2 x - \sin^2 y}{\cos x \times \cos y}$$

$$\therefore \cos^2 x \times \cos y = \cos^2 x - \sin^2 y$$

$$\therefore \cos^2 x \times (1 - \cos y) = \sin^2 y$$

$$\therefore \cos^2 x = \frac{4 \times \sin^2 \frac{y}{2} \times \cos^2 \frac{y}{2}}{2 \times \sin^2 \frac{y}{2}}$$

$$\therefore \cos^2 x = 2 \times \cos^2 \frac{y}{2}$$

$$\therefore \cos^2 x = \frac{2}{\sec^2 \frac{y}{2}}$$

$$\therefore \cos^2 x \times \sec^2 \frac{y}{2} = 2$$

$$\therefore |\cos x \times \sec \frac{y}{2}| = \sqrt{2}$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #34: (05-Jul-09)

“... for 'am admi', the purpose of national disaster management is two-fold: the national government must promote safe economic growth as well as help reduce risks faced by the poor.” – if these two things do not go hand in hand they cannot be achieved, making the demands, by default, unattainable. A literal examination of this statement indicates the first option. The other options do not prove this and can be ruled out.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #35: (06-Jul-09)

∴ x is the largest 3 digit number which when divided by 3 or 8 leaves a remainder of 2.
 ∴ x should leave a remainder of 2 when divided by the LCM of 3 and 8 i.e 24
 ∴ We are interested in the largest three digit number, we should first find out the largest three digit multiple of 24.

This can be obtained by first dividing 999 by 24 which leaves a remainder of 15.

∴ $999 - 15 = 984$ is the largest three digit multiple of 24

Now adding the remainder 2 to the number gives 986 which is the required value of x .

∴ y is the largest number with which when 486, 686 and 986 are divided the remainders are the same.

Taking the difference between any two out of the three numbers,

$$686 - 486 = 200 \text{ and } 986 - 686 = 300$$

y is the HCF of these two differences.

∴ y is the HCF of 200 and 300 which is 100.

If a number N can be expressed as:

$$N = a^p \times b^q \times \dots, \text{ where } a \text{ and } b \text{ are prime}$$

then the number of co-primes of N which are less than N is given by,

$$N \left(1 - \frac{1}{a}\right) \left(1 - \frac{1}{b}\right) \dots$$

$$\text{Now, } 100 = 2^2 \times 5^2$$

∴ Number of co-primes of 100 less than 100 is given as

$$100 \left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{5}\right) = 40$$

∴ Number of co-primes of 100 less than 100 is 40.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #36: (07-Jul-09)

The paragraph states that lycopene ingested in its natural form is not absorbed - hence it cannot reduce the oxidation of harmful fats in the blood and thus stave off heart disease. Option 3 states that consumption of tomatoes can help reduce oxidation of fats – whereas it cannot.

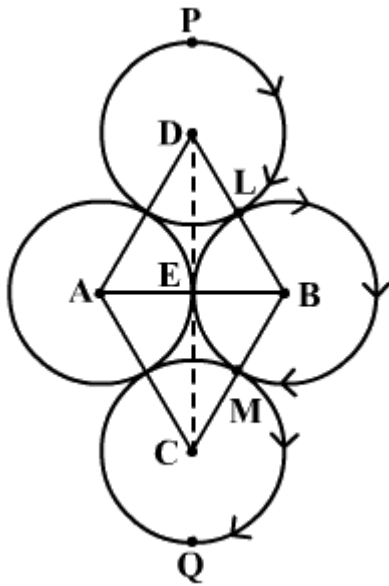
All the other options help strengthen what is stated in the paragraph.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #37: (08-Jul-09)

If we join the centers of each circle we get the following figure.



Here $AB = AE + EB$

∴ The radius of each circle is 1 metre.

∴ $AE = EB = 1$

∴ $AE + EB = 2$ metres

∴ $DL = LB$

∴ $DL + LB = 2$ metres

∴ $AD = 2$ metres

Similarly, $BM = MC$

∴ $\triangle ABD$ and $\triangle ABC$ are equilateral triangles with side = 2 metres

∴ $AE = EB$

∴ DE is the median of $\triangle ABD$

∴ In an equilateral triangle the median is also the angle bisector as well as the perpendicular bisector.

∴ DE is also the angle bisector for $\angle ADB$

∴ $m \angle BDE = 30^\circ$

∴ PE passes through the diameter of the circle with centre D ,

$$\therefore m \angle PDB = m \angle PDL = 150^\circ$$

$$\therefore \text{Length of an arc} = \frac{\pi \times \text{radius} \times \theta}{180^\circ}$$

$$\therefore \text{Length of arc PL} = \frac{\pi \times 1 \times 150^\circ}{180^\circ} = \frac{5\pi}{6}$$

$$\text{Similarly length of arc QM} = \frac{5\pi}{6}$$

$$\therefore m \angle DBA + m \angle CBA = 60^\circ + 60^\circ = 120^\circ$$

$$\therefore m \angle LBE + m \angle MBE = 120^\circ$$

$$\therefore \text{Angle subtended by the major arc LM} = 240^\circ$$

$$\therefore \text{Length of arc LM} = \frac{\pi \times 1 \times 240^\circ}{180^\circ} = \frac{4\pi}{3}$$

$$\therefore \text{Total length the ant has to travel to get its food} = \frac{5\pi}{6} + \frac{4\pi}{3} + \frac{5\pi}{6} = 3\pi \text{ metres}$$

Hence, option 3.

Alternatively,

We know circumference of circle = $2\pi \times \text{radius}$

A circle corresponds to 360° .

We have

$$\text{Arc PL} = 150^\circ$$

$$\text{Arc LM} = 240^\circ$$

$$\text{Arc LQ} = 150^\circ$$

$$\therefore \text{Total arc degree} = 150^\circ + 240^\circ + 150^\circ = 540^\circ$$

$$\therefore \text{Arc of } 360^\circ \text{ corresponds to a length of } 2\pi \times \text{radius.}$$

$$\therefore \text{Arc of } 540^\circ \text{ corresponds to a length of}$$

$$\frac{540}{360} \times 2\pi \times 1 = 3\pi \text{ metres}$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #38: (09-Jul-09)

Option 1, if true, would result in Maruti's share of sales in Suzuki Motor going up in percentage terms- not necessarily profits.

Options 2 and 3 mention increase in sales of Maruti's products- that does not necessarily translate into increase in its share of profits.

Option 4 can be eliminated as we cannot infer from the information given in the option- launch of Suzuki's top line models in the Indian market first- whether that translated into Maruti increasing its share of Suzuki's profits.

If shares of profits of other subsidiaries of Suzuki Motors in various markets had declined in the fiscal year- then we can infer that Maruti's share of profits in Suzuki must have increased.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #39: (10-Jul-09)

Consider statement A alone,

We can deduce that as the polygon has only two diagonals it has to be a quadrilateral.

But we cannot conclude anything about its structure.

∴ The question cannot be answered on the basis of statement A alone

Consider statement B alone,

It just says that the sum of products of all pairs of opposite sides of the polygon is 45cm^2 .

From statement B we cannot conclude anything.

∴ The question cannot be answered on the basis of statement B alone.

Consider statements A and B together,

From statement A we deduce that the given polygon is a quadrilateral and the product of its diagonals is 45 cm^2 .

From statement B we know that the sum of product of all pairs of opposite sides of the polygon is also 45 cm^2 .

We know that, for a cyclic quadrilateral sum of product of all pairs of opposite sides is equal to product of its diagonals.

∴ We conclude that the given polygon is cyclic.

∴ We can answer the question by using statements A and B together.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #40: (11-Jul-09)

The question in option 1 is a rhetorical question – asked not to elicit an answer but to state its negative as the answer. The dubious reputation of IRDA and the appointment of a retired IAS/IRS to the post of ombudsman ‘becomes a feather in its cap’ when it is certain that the appointment is faulty.

Options 2, 3 and 5 explain certain terms that may require clarification to an unformed reader but do not help ‘complete’ the paragraph.

Option 4 can be considered for the answer. If the appointment had been made option 4 could have served as the answer. Since only applications have been invited and the possibility of the strangle-hold is increasing, the first question (option) is more relevant than an exclamation.

The possibility more aptly closes it than the categorical exclamation.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #41: (12-Jul-09)

Using statement A alone,

From statement A we can determine only the distance between point P and vertex A.

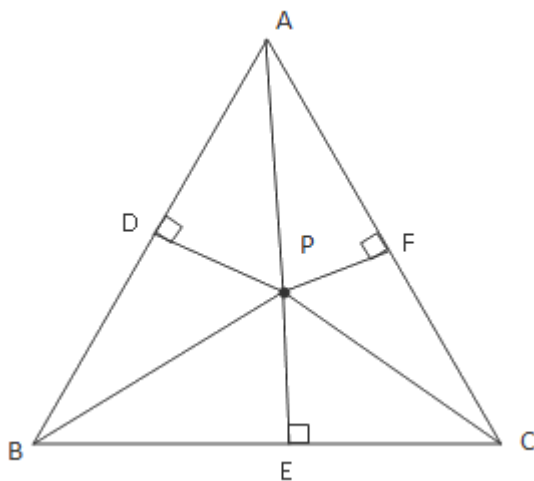
From this we cannot determine distance of point P from the sides of the triangle.

∴ The question can not be answered by using statement A alone.

Using statement B alone,

Since we know the co-ordinates of vertices B and C, we can find the length of the sides of the equilateral ΔABC .

∴ We can determine the height of ΔABC .



Let s and h be the side and height of ΔABC respectively.

Now, Area of $\Delta ABC = \text{Area of } \Delta ABP + \text{Area of } \Delta ACP + \text{Area of } \Delta BPC$

$$\therefore \frac{1}{2} \times s \times h = \frac{1}{2} \times s \times PD + \frac{1}{2} \times s \times PF + \frac{1}{2} \times s \times PE$$

$$\therefore h = PD + PF + PE$$

As the length of each side of ΔABC is known, the height h can be determined.

\therefore The question can be answered by using statement B alone.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #42: (13-Jul-09)

We need to look for an option that ‘most seriously weakens’ the hypothesis. It need not destroy the hypothesis.

Option 3 by stating that a plane is fitted with mechanisms that can “dissipate electricity safely and completely” – lightning is electricity – weakens the hypothesis that the plane was damaged by lightning/electricity.

The other options either support the hypothesis or are milder than option 3.

Options 2,4 and 5 in a way prove the hypothesis.

Option 1 has to be negated as it reduces the chances of damage, but does not provide an effective refutation of the hypothesis.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #43: (14-Jul-09)

Let a denote the smallest angle of the polygon and d be the common difference and n be the number of angles of the polygon.

\therefore The angles of the polygon will be of the form $a, a + d, a + 2d, \dots$ and so on.

\therefore The product of the 4th and the 5th term of the progression is 18200.

$$\therefore (a + 3d)(a + 4d) = 18200 \quad \dots(i)$$

\therefore 5th term when divided by the second term gives a quotient of 1 and remainder of 30

$$\therefore (a + 4d) = (a + d) + 30 \quad \dots(ii)$$

Solving equations (i) and (ii) we get,

$$a = 100 \text{ and } d = 10$$

$$\therefore \text{Sum of the interior angles of a polygon} = (2n - 4) \times 90$$

$$\therefore n/2 [2a + (n - 1)d] = (2n - 4) \times 90 \quad \dots(iii)$$

$$n = 9 \text{ or } 8$$

\therefore Number of sides of the polygon = Number of interior angles = 9 or 8

\therefore Number of diagonals that can be drawn in a polygon is given by $n(n - 3)/2$

\therefore Number of diagonals that can be drawn can be 27 or 20

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #44: (15-Jul-09)

The passage mentions the correlation between peace and wealth creation- in times of peace motivated people (businesses) have the environment for wealth creation. In order to strengthen this argument we need to say that it is true, and provide some fact to prove it. The paragraph mentions 2000-2007 period as one in which conflicts reduced, option 1 states that during this time the global GDP increased - the correlation is well established and the argument is strengthened.

Option 2 is irrelevant as it is about how defence spending is divided between personnel and, probably, equipment.

Option 3 is also irrelevant because it talks about the projected increase in defence expenditure- there is no correlation except that economic productivity may decrease.

Options 4 and 5 similarly do not show the correlation between peace and wealth, but the relation between economic downturn and defence spending.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #45: (16-Jul-09)

Let the total number of all animals be x .

One-fourth of all animals with fishes

$$\therefore \text{Fishes} = \frac{1}{4} x$$

One-fourth with insects

$$\therefore \text{Insects} = \frac{1}{4} x$$

One-sixth with amphibians

$$\therefore \text{Amphibians} = \frac{1}{6} x$$

One-twelfth with reptiles

$$\therefore \text{Reptiles} = \frac{1}{12} x$$

One-eighth with birds

$$\therefore \text{Birds} = \frac{1}{8} x$$

One-tenth with mammals

$$\therefore \text{Mammals} = \frac{1}{10} x$$

The rest is man.

$$\therefore \frac{1}{4} x + \frac{1}{4} x + \frac{1}{6} x + \frac{1}{12} x + \frac{1}{8} x + \frac{1}{10} x + \text{man} = x$$

$$\therefore \text{man} = \frac{3}{120} x = \frac{1}{40} x = 2.5\% x$$

Therefore man is 2.5% of all animals.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #46: (17-Jul-09)

How will climate change affect agriculture? This question is already answered in the paragraph. The idea now to be brought to a logical conclusion in the paragraph is that of the Conference of Parties of the UN Framework Convention on Climate Change. Option 3 closes this by urging the participants – global community is especially significant from this point of view – to use the opportunity to ensure food security. This addresses the issues of agriculture and the ‘poorest of the poor’ adequately to close the paragraph. Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #47: (18-Jul-09)

$$\text{We have, } \sqrt{t} = \frac{t-1}{\sqrt{t-\frac{1}{t}} - \sqrt{1-\frac{1}{t}}}$$

We rationalize the denominator of RHS by multiplying numerator and denominator by,

$$\left(\sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}} \right)$$

Which gives us,

$$\sqrt{t} = \frac{(t-1) \left(\sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}} \right)}{\left(\sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}} \right) \left(\sqrt{t-\frac{1}{t}} - \sqrt{1-\frac{1}{t}} \right)}$$

$$\therefore \sqrt{t} = \frac{(t-1) \left(\sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}} \right)}{\left(t-\frac{1}{t} \right) - \left(1-\frac{1}{t} \right)}$$

$$\therefore \sqrt{t} = \frac{(t-1) \left(\sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}} \right)}{(t-1)}$$

At $t = 1$ equality does not hold, therefore we can cancel $(t-1)$ from numerator and denominator

$$\therefore \sqrt{t} = \sqrt{t-\frac{1}{t}} + \sqrt{1-\frac{1}{t}}$$

$$\therefore \sqrt{t} = \sqrt{\frac{t^2 - 1}{t}} + \sqrt{\frac{t - 1}{t}}$$

$$\therefore t = \sqrt{t^2 - 1} + \sqrt{t - 1}$$

$$\therefore t - \sqrt{t - 1} = \sqrt{t^2 - 1}$$

Squaring both sides, we get,

$$t^2 + t - 1 - 2t\sqrt{t - 1} = t^2 - 1$$

$$\therefore t \times (1 - 2\sqrt{t - 1}) = 0$$

$\because t \neq 0$, we have,

$$\therefore (1 - 2\sqrt{t - 1}) = 0$$

$$\therefore \sqrt{t - 1} = \frac{1}{2}$$

$$\therefore t - 1 = \frac{1}{4}$$

$$\therefore t = 1 + \frac{1}{4}$$

$$\therefore t = \frac{5}{4}$$

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #48: (19-Jul-09)

Job losses slowed dramatically in May 2009 – down from 504,000 in April to 345,000 – fewest since September – certain sectors are still reporting widespread job losses. This is in essence what the paragraph is. Then how did the decline in number happen? We need to answer that issue to close the paragraph. Option 4 explains how the decline stopped. All the other options will leave the paragraph still open.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #49: (20-Jul-09)

For a quadratic equation $ax^2 + bx + c = 0$,

Sum of the roots = $-b/a$ and

Product of the roots = c/a

Therefore, for the given quadratic equation,

the sum of the roots = $(K + 5)$ and product of the roots = $3(2K + 1)$

Now, $3(K + 5) = 3(2K + 1)$

$\therefore K + 5 = 2K + 1$

$\therefore K = 4$

Therefore, the second equation will become $x^4 - 4x^3 + mx^2 + nx + 1 = 0$

Now, if we take the second option $m = 6, n = -4$, the equation will become $x^4 - 4x^3 + 6x^2 - 4x + 1 = 0$

In this equation, the sign of the terms is changing 4 times, hence it will have 4 positive roots.

According to "Descartes' rule of signs", the number of positive roots of a polynomial with real coefficients is equal to the number of "changes of sign" in the list of coefficients, or is less than this number by a multiple of 2.

Hence option 2.

[Discuss the solution with Testfunda users.](#)

Solution #50: (21-Jul-09)

The correct answer is option 2. Option 4 too could be considered for the answer and is perhaps as good from the point of view of the narrative. However, I have found a trigger; the second last sentence of the paragraph raises questions: trigger for what? The answer is 'a trigger for the symptoms' of a disorder. Hence option 2 completes the paragraph more logically and completely brought to a smooth closure. Also, on closer examination we can see that option 4 is a generalised inference – in other words what is already implied in the paragraph. There is no need to state it. It is actually stating the obvious.

Hence, the correct answer is option 2.

[Discuss the solution with Testfunda users.](#)

Solution #51: (22-Jul-09)

As it is known that any contestant can enter and exit from any gate, the first contestant can enter from any of the six gates. He latches that door from inside and after completing his task he moves out from another door latching it from outside.

Hence at this position 2 doors are latched, one from inside and the other from outside. When the 2nd contestant starts his task he enters from a door which was not used by the 1st contestant and latches it from inside, completes his task and moves from some other door and then latches it from outside.

The 3rd contestant does the same.

Now at this stage all the six doors are latched, three from inside and three from outside. Hence the next contestant can enter from any of the three doors latched from outside.

As the 4th contestant enters by opening a door latched from outside and leaves by opening a door latched from inside, at this stage there are 4 latched doors: two latched from outside and other two latched from inside

Now the 5th contestant enters who latches the doors he uses i.e. if he comes across a latched door and he can open it he uses it and latches it from other side.

So when he starts his task there are two open doors, two doors latched from inside and two doors latched from outside so there arise following cases:

He enters from a door latched from outside and leaves from a door latched from inside

He enters from a door latched from outside and leaves from a door which is not latched

He enters from a door which is not latched and leaves from a door which is not latched

He enters from a door which is not latched and leaves from a door latched from inside

Depending on the above cases the situation after contestant 5 has moved out can be tabulated as follows

	Doors which are not latched	Doors latched from inside	Doors latched from outside
Case 1	2	2	2
Case 2	1	3	2
Case 3	0	3	3
Case 4	1	2	3

Now when the 6th contestant starts he can select any door at random. His probability of entering the room depends on the doors used by the 5th contestant.

If 5th contestant follows case 1 then,

The probability that the 6th contestant would be able to enter is $\frac{2}{3}$

If 5th contestant follows case 2 then,

The probability that the 6th contestant would be able to enter is $\frac{1}{2}$

If 5th contestant follows case 3 then,

The probability that the 6th contestant would be able to enter is $\frac{1}{2}$

If 5th contestant follows case 4 then,

The probability that the 6th contestant would be able to enter is $\frac{2}{3}$

And the probability of a particular case being selected is $\frac{1}{4}$

So the probability that the 6th contestant is able to enter through a randomly selected door is given as follows

$$p = \frac{1}{4} \times \left(\frac{2}{3} + \frac{1}{2} + \frac{1}{2} + \frac{2}{3} \right)$$

$$\therefore p = \frac{1}{4} \times \left(\frac{4}{3} + 1 \right)$$

$$\therefore p = \frac{1}{3} + \frac{1}{4}$$

$$\therefore p = \frac{7}{12}$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #52: (23-Jul-09)

Option 2 is the most neutral sentence available to close the paragraph. 'Elaborate' and 'innovation famine' are well supported by the paragraph. It matches the tone as well. Option 1 is rather judgmental about what is going on at Microsoft. The word is 'official' is somewhat out of place.

Similarly 'competition' and 'expenditure' are out of place too, eliminating 4 and 5.

Hence, the correct answer is option 2.

[Discuss the solution with Testfunda users.](#)

Solution #53: (24-Jul-09)

We have, $f(n + 2) = \frac{f(n + 1) + 1}{f(n)}$... (i)

Put $n = n + 1$ in (i)

$\therefore f(n + 3) = \frac{f(n + 2) + 1}{f(n + 1)}$... (ii)

Put $n = n + 1$ in (ii)

$\therefore f(n + 4) = \frac{f(n + 3) + 1}{f(n + 2)}$... (iii)

$= \frac{\frac{f(n + 2) + 1}{f(n + 1)} + 1}{f(n + 2)}$... from (ii)

$= \frac{f(n + 2) + 1 + f(n + 1)}{f(n + 1)f(n + 2)}$
 $= \frac{f(n + 2) + f(n)f(n + 2)}{f(n + 1)f(n + 2)}$... from (i)

$= \frac{f(n + 2)[1 + f(n)]}{f(n + 1)f(n + 2)}$
 $= \frac{1 + f(n)}{f(n + 1)}$... (iv)

Put $n = n + 1$ in (iii)

$\therefore f(n + 5) = \frac{f(n + 4) + 1}{f(n + 3)}$
 $= \frac{\frac{1 + f(n)}{f(n + 1)} + 1}{f(n + 3)}$... from (iv)

$= \frac{f(n) + 1 + f(n + 1)}{f(n + 1)f(n + 3)}$
 $= \frac{f(n) + f(n)f(n + 2)}{f(n + 2) + 1}$... from (i) and (ii)

$= \frac{f(n)[1 + f(n + 2)]}{f(n + 2) + 1}$
 $= f(n)$

$\therefore f(n + 5) = f(n)$, and the smallest value of p for which $f(n + p) = f(n)$ is 5

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #54: (25-Jul-09)

Options 1,3 and 5 are beyond the scope of the information provided, and are hence eliminated. Two major themes are present in the passage:

1. "there are only local issues being debated in state after state"
2. "... it now appears there simultaneously exists a silent undercurrent, even a mini-wave, at the national level..."

These two themes are properly introduced in option 4. Option 2 puts the focus on 'electorate' which may not necessarily be true in the context of issues being debated. hence, option 2 can be eliminated.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #55: (26-Jul-09)

Case 1:

$$a = b = c = d = e = 1$$

There is just one arrangement,

∴ 1 sequence.

Case 2:

We have four 1's, say $a = b = c = d = 1$ and $e \neq 1$, then $e = 2, 3, 4, 5, 6$.

Now as all the variables are independent,

∴ we have $5 \times 5 = 25$ sequences.

Case 3:

We have three 1's, then last two can be (2, 2), (2, 3), (3, 3), (2, 4) and (2, 5).

(1, 1, 1, 2, 2) and (1, 1, 1, 3, 3) can be arranged in $\frac{5!}{2! 3!} = 10$ ways each,

∴ we get 20 sequences.

(1, 1, 1, 2, 3), (1, 1, 1, 2, 4) and (1, 1, 1, 2, 5) can be arranged in $\frac{5!}{3!} = 20$ ways each,

∴ we get $3 \times 20 = 60$ sequences.

∴ a total of 80 sequences.

Case 4:

We have two 1's, then the other three numbers must be 2.

Now (1, 1, 2, 2, 2) can be arranged in $\frac{5!}{2! 3!} = 10$ ways.

Adding all the four cases we get $1 + 25 + 80 + 10 = 116$ sequences.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #56: (27-Jul-09)

“Sweetening the breath” in option 1 and “paused to do her part” in option 2 eliminate them. Option 1 make the issue sound frivolous, while option 2 contradicts the paragraph. Option 3 talks of America, whereas the rest of the passage is at a global level. Option 4 is too abrupt a beginning. As cows belch methane, and methane contributes to global warming, climate scientists want them to belch less. Option 5 is an apt start. Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #57: (28-Jul-09)

∴ The person has to reach city L latest by 1:30 am on 25th June and he starts from A at 5 am on 24th June.

∴ He has maximum 20.5 hours to reach L from A.

∴ We first need to find routes which require less than 20.5 hours to reach L from A.

Let us first consider the direct route A – C – F – H – K – L. ... (i)

We get that this route requires 20 hours (excluding the breaks for refuelling).

∴ Indirect routes including the cities used in the above route should not be considered as the time required to travel through any of those routes will be more than the time required for the above route i.e. 20 hours and hence will not be valid.

For example:

A – B – C – F – H – K – L
 A – B – C – F – E – G – H – K – L
 A – B – C – F – J – H – K – L
 A – B – C – D – E – F – H – K – L
 A – B – C – D – E – F – J – H – K – L
 A – C – F – E – G – H – K – L
 A – C – F – J – H – K – L
 A – C – D – E – F – H – K – L
 A – C – D – E – F – J – H – K – L

Now let's consider another direct route i.e. A – B – D – E – G – K – L ... (ii)

This route requires 19 hours (excluding the breaks for refuelling).

Indirect routes which can be neglected are:

A – B – C – D – E – G – K – L
 A – B – C – D – E – G – H – K – L
 A – B – D – E – G – H – K – L

As the time required in these routes will be greater than 20.5 hours.

As the time required to travel from A to D via B is 6 hours and the time required via C is 7 hours.

∴ Route A – C – D – E – G – K – L should also be considered. ...(iii)

This route requires 20 hours (excluding the breaks for refuelling).

∴ Indirect route which can be neglected is A – C – D – E – G – H – K – L

Now let us consider another direct route A – C – I – J – H – K – L

This route requires 23 hours and hence can be neglected.

∴ Indirect route which also can be neglected is A – B – C – I – J – H – K – L

There are few more indirect routes which require more than 20.5 hours and hence can be neglected:

A – B – C – F – E – G – K – L
A – B – D – E – F – H – K – L
A – B – D – E – F – J – H – K – L

∴ There are only three routes between A and L which require time less than 20.5 hours.

From (i), (ii) and (iii) we get:

A – C – F – H – K – L
A – B – D – E – G – K – L
A – C – D – E – G – K – L

Now we know that his car already has 30 litres of fuel. Hence, he can start travelling without incurring any fuel cost. His first fuel cost will be incurred whenever he stops for fuelling.

It also requires 4 litres of fuel every hour.

∴ He can travel maximum 7.5 hours at a stretch, post which he will have to take a break of 15 mins for refuelling which can be done only at cities.

Now to travel through this route 1 i.e. A – C – F – H – K – L, he will have to take a break for refuelling at C as he will not be able to drive his car continuously for 8 hours from A to F.

Similarly he will have to take breaks at F, H and K also.

Each break takes 15 minutes.

∴ He will not be able to reach L from A in 20.5 hours.

∴ This route can also be neglected.

Now we will calculate the costs required to travel through the remaining two routes.

For route A – B – D – E – G – K – L

He will take two breaks at city D and city G for refuelling.

∴ The total time required would be 19.5 hours.

In this route he travels through 4 State highways and 2 Expressways.

∴ Toll required on this route is Rs. 440 (Rs. 50 on each State highway and 120 on each Expressway)

He has to fill up the entire tank. Since he has used up 24 litres of fuel between A and D, he still has 6 litres left in the tank. Hence, he needs to fill up only 24 litres.

Similarly, since he has used up 28 litres of fuel between D and G, he still has 2 litres left in the tank. Hence, he needs to fill up only 28 litres.

He will have to refuel 24 litres at city D and 28 litres at city G.

∴ Cost of refuelling will be Rs. 2600

∴ Total money spent will be Rs. 3040.

For route A – C – D – E – G – K – L

He will take two breaks at city D and city G for refuelling.

∴ The total time required would be 20.5 hours.

In this route he travels through 5 State highways and 1 Expressway.

∴ Toll required on this route is Rs. 370 (Rs. 50 on each State highway and 120 on each Expressway)

He will have to refuel 28 litres at city D and 28 litres at city G.

∴ Cost of refuelling will be Rs. 2800

∴ Total money spent will be Rs. 3170.

∴ The cheapest route possible to City L from A is A – B – D – E – G – K – L

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #58: (29-Jul-09)

To get the first sentence right we need to think of how the writer is going to lead his reader through the information he wants to present. Option 4 states the problem and then the paragraph explains it. Option 1 and 5 begin with the solution – it is one of the ways to start a paragraph. But here the writer is definitely not writing to advocate that solution, but to highlight the problem. Hence option 4 scores over 1 and 5.

Option 3 – one of the challenges – is also not the purpose of the paragraph. The inference may be true but the purpose of the paragraph is not to highlight this challenge.

Option 2 states ‘half the problem’ – which is vague as the paragraph does not state the other half (if at all there).

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #59: (30-Jul-09)

Let the integers be a , ar and ar^2 , then $a + ar + ar^2 = 111$

$$\therefore a(1 + r + r^2) = 111$$

We note that $(1 + r + r^2) > 0$, hence $a > 0$

$$\therefore a(1 + r + r^2) = (1 \times 111), \text{ or } (3 \times 37), \text{ or } (37 \times 3), \text{ or } (111 \times 1)$$

So, we have the following four cases:

Case 1: When $a = 1$

$$1 + r + r^2 = 111$$

$$\therefore r^2 + r - 110 = 0$$

$$\therefore (r + 11)(r - 10) = 0$$

$$\therefore r = 10 \text{ or } -11$$

So, we get two sets of solutions $(1, 10, 100)$ and $(1, -11, 121)$.

Case 2: When $a = 3$

$$1 + r + r^2 = 37$$

$$\therefore r^2 + r - 36 = 0$$

This has no integral solutions.

Case 3: When $a = 37$

$$1 + r + r^2 = 3$$

$$\therefore r^2 + r - 2 = 0$$

$$\therefore (r - 1)(r + 2) = 0$$

$$\therefore r = 1 \text{ or } -2$$

So, we get two sets of solutions (37, 37, 37) and (37, -74, 148). The first set is to be rejected as the integers are not distinct.

Case 4: When $a = 111$

$$1 + r + r^2 = 1$$

$$\therefore r^2 + r = 0$$

$$\therefore r(r + 2) = 0$$

$$\therefore r = 0 \text{ or } -1$$

So, we get two set of solutions (111, 0, 0) and (111, -111, 111). Both are to be rejected as the integers are not distinct.

\therefore From the above four cases, we have 3 distinct valid sets.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #60: (31-Jul-09)

The two things mentioned in the paragraph are:

- 1) concern for the well-being of others, (even unrelated others), and,
- 2) of finely crafted material objects both useful and ornamental.

These two most closely correspond to morality and culture. Option 5 may come close – but the writer is not talking about love when he states concern; art is different from ‘objects both useful and ornamental’.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #61: (01-Aug-09)

Taking the reciprocal of the first relation we get

$$\frac{x_1 + 1}{x_1} = \frac{x_2 + 3}{x_2} = \frac{x_3 + 5}{x_3} = \dots$$

Or

$$\frac{1}{x_1} = \frac{3}{x_2} = \frac{5}{x_3} = \dots$$

Taking reciprocals again, we get

$$x_1 = \frac{x_2}{3} = \frac{x_3}{5} = \dots$$

$$\therefore x_n = (2n - 1)x_1$$

Using the above in $x_1 + x_2 + x_3 + \dots + x_{1005} = 2010$

we get $x_1 + 3x_1 + 5x_1 + \dots + 2009x_1 = 2010$

Or

$$1005^2 x_1 = 2010$$

$$\therefore x_1 = \frac{2}{1005}$$

$$\therefore x_{25} = 49x_1 = \frac{98}{1005}$$

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #62: (02-Aug-09)

Tomatoes are beneficial to health because they contain lycopene. Based on this assumption scientists have engineered a variety that contains more lycopene. The assumption is that when one consumes lycopene it is beneficial to health. Hence if a tomato contains more lycopene it is better.

Option 2 is not assumed by the scientists - their efforts are to make lycopene easily available. Option 3 is also not assumed because we cannot say (there is no data) that the scientists chose tomatoes for this reason. For the same reason options 4 and 5 are also eliminated. Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #63: (03-Aug-09)

Let $abcd$ be a *peculiar* number, then

$$10a + b + 10c + d = 10b + c$$

$$\therefore 10a + d = 9(b - c)$$

RHS is a multiple of 9, hence LHS has to be a multiple of 9.

To find the *peculiar* number just before 1978, it is easy to see $a = 1$ and $d = 8$ and therefore $b - c = 2$.

To keep the number as close to 1978, $b = 8$ and hence $c = 6$. So the number just before 1978 is 1868.

To find the *peculiar* number just after 1978, we need to note that 1978 is the biggest *peculiar* number less than 2000.

Hence $a = 2$, which makes $d = 7$ (27 is a multiple of 9).

This gives $b - c = 3$, which gives $b = 3$ and $c = 0$. Hence the number is 2307.

\therefore The sum of two *peculiar* number is $2307 + 1868 = 4175$

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #64: (04-Aug-09)

The question has to actually answer the question, "...but where did these organic molecules come from?" The answer as suggested in the paragraph is that they came from outside (either from a comet or an asteroid). In that case life must have existed elsewhere in the universe.

Therefore, the correct answer option is option 1.

Option 2 merely repeats the idea that has to be strengthened.

Option 3, 4 and 5 mention 'inorganic' whereas we need to prove the 'organic' aspect.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #65: (05-Aug-09)

It is clear that the digit 1 is the digit that will first get written 119 times, since it will occur in the hundreds place for all numbers greater than 100 and less than 200.

To find the number at which Ram stops, we need to count the number of 1's that are used up to that number.

Assume that the number is greater than 100.

Then, the total number of times the digit 1 is used in writing the numbers from 1 to 99 is 20 (it is used 10 times in the units place and 10 times in the tens place).

It is used 11 times in writing the numbers from 100 to 109 (ten times in the hundreds place and once in the units place).

Similarly, it is used 21 times in writing the numbers from 110 to 119, and 11 times in the subsequent intervals of ten.

Counting in this fashion, we find that the 119th occurrence of 1 occurs when he has written 180.

The total of the numbers up to this point is $= 1 + 2 + 3 + \dots + 180 = (180 \times 181) / 2 = 90 \times 181 = 16290$.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #66: (06-Aug-09)

Options 1 is incorrect because of 'competitive markets' whereas the fact is that "perfect competition" eliminates 'economic rent'.

Option 2 is not correct because it states "In economics rent is ..." both the meanings of 'rent' are from economics.

Option 4 is vague in 'ordinary definition'. Secondly, it does not explain what 'rents' and 'economic rents' are.

Option 5 incorrectly states 'in economics rent is ..' whereas both the meanings are from economics. Economic rent is acceptable as a different term with different meaning, but we cannot say rent is one thing and in economics rent is another thing.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #67: (07-Aug-09)

Using statement A alone:

(1, 98), (2, 97)... (49, 50) and (99), we can pick only one number from each set and 99. So we have different sets, which lead to many different sums, hence insufficient data.
∴ Statement A alone is not sufficient.

Using statement B alone:

(1, 99), (2, 98), (3, 96) ... (49, 51) and (50), we can pick only one number from each set and 50. So we have different sets, which lead to many different sums, hence insufficient data.
∴ Statement B alone is not sufficient.

Using statements A and B together:

No two numbers sum to 99 or 100, then if we arrange the set as 99, 1, 98, 2, 97, ..., 51, 49, 50, then any two adjacent terms add up to 99 or 100, so we can pick only one out of any two adjacent terms.

We further group the set into pairs, and then we have 49 pairs and the number 50. As we have to choose 50 terms, only one number from each pair can be chosen.

Hence, 50 must be definitely chosen, which causes 49 to be rejected. Hence, 51 has to be chosen which results in 48 to be rejected and 52 to be chosen and so on.

Hence the chosen set of numbers is 50, 51, 52, ..., 97, 98, 99. Hence we can find the sum by subtracting the sum of the first 49 natural numbers from the sum of the first 99 natural numbers.

∴ Statement A and B together are sufficient to answer the question.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #68: (08-Aug-09)

The options are word play with similar and dissimilar and convergence and divergence. A closer examination will help you understand the differences.

Option 1 mentions 'structure and biology' which are in the context of the paragraph the same thing- 'behaviour and biology' are required. Secondly, its definition of divergence is incorrect. Option 2, the definition of divergence is incorrect. It should be 'closely related animals' and not 'unrelated animals'.

In option 3 the definition of convergence is incorrect. It should be 'similar responses to similar environmental conditions'.

In option 4, the definition of convergence is incorrect. It should read 'similar environmental conditions' and not 'dissimilar environmental conditions'.

Option 5 correctly captures the essence of the text.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #69: (09-Aug-09)

Using $f(A, B) = f(A - 1, f(A, B - 1))$ on $f(1, 1500)$,

we get $f(1, 1500) = f(0, f(1, 1499))$

$$= f(1, 1499) + 1 \text{ (using } f(0, k) = k + 1)$$

$$= f(0, f(1, 1498)) + 1$$

$$= f(1, 1498) + 2$$

$$= f(1, 0) + 1500$$

$$= f(0, 1) + 1500$$

$$= 1 + 1 + 1500$$

$$= 1502$$

$$\therefore f(1, 1500) = 1502$$

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #70: (10-Aug-09)

Option 1 is incorrect because it makes an assumption that only animal spirits guided an entrepreneur.

Option 2 is incorrect because animal spirits do not make an entrepreneur unmindful of the risks.

Option 3 is incorrect because animal spirits do not help him put aside the loss.

Option 5 is incorrect because animal spirits do not help him postpone the thoughts.

Option 4 captures the essence.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #71: (11-Aug-09)

We can express the n^{th} term of X as $\frac{(n-1)!}{(n+2)!} = \frac{1}{n(n+1)(n+2)}$

$$= \frac{1}{2} \times \left[\frac{n+2-n}{n(n+1)(n+2)} \right]$$

$$= \frac{1}{2} \times \left[\frac{1}{n(n+1)} - \frac{1}{(n+1)(n+2)} \right]$$

Thus, the first term becomes $\frac{1}{2} \times \left[\frac{1}{1 \times 2} - \frac{1}{2 \times 3} \right]$, the second term becomes

$$\frac{1}{2} \times \left[\frac{1}{2 \times 3} - \frac{1}{3 \times 4} \right], \text{ and so on, till the last term, which becomes } \frac{1}{2} \times \left[\frac{1}{98 \times 99} - \frac{1}{99 \times 100} \right].$$

Adding all these, we see that the first part of each term cancels with the last part of the previous term, leaving only the overall first and last terms.

$$\therefore X = \frac{1}{2} \times \left[\frac{1}{1 \times 2} - \frac{1}{99 \times 100} \right] = \frac{1}{2} \times \left[\frac{1}{2} - \frac{1}{9900} \right] = \frac{4949}{19800}$$

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #72: (12-Aug-09)

Option 1 distorts the ideas in the passage in “cults including Sikhism” – Sikhism is not a cult but a religion.

Option 2 states ‘combined the influences of Ramananda and Sufi masters..’ which is again a distortion – the passage states ‘the best tenets of both..’ implying Hinduism and Islam rather than of the specific masters. Also in option 2, “cults which became the forerunner of Sikhism” is also a distortion.

Option 3 erroneously states that Kabir ‘founded’ Sikhism; also the influences mentioned are too specific.

Option 5 is inadequate in highlighting the main points.

Option 4 can be chosen as the best because it states the main ideas without distorting the facts.

Hence, the correct answer is option 4.

[Discuss the solution with Testfunda users.](#)

Solution #73: (13-Aug-09)

Let us denote such a number by XY , where X is the digit in the tens place and Y is the digit in the units place.

The number formed by reversing the digits is denoted by YX .

The sum of these numbers = $10X + Y + 10Y + X = 11(X + Y)$

This must be equal to n^2 , for some integer n . If $11(X + Y) = n^2$, we must have both n and $(X + Y)$ divisible by 11.

However, since X and Y are both digits, the maximum possible sum they can have is 18, and therefore $(X + Y) = 11$

The possible numbers with this property are 29, 38, 47, 56, 65, 74, 83 and 92.

There are 8 such numbers.

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #74: (14-Aug-09)

The paragraph can be summarised thus: The interest in Existentialism (as it spread in Europe) is diverse: religious, metaphysical, moral and political. Existentialism is able to accommodate all this because (as a philosophy) it draws from various sources. Among those sources are: subjectivism of St. Augustine, Dionysian Romanticism of Nietzsche, and the nihilism of Dostoyevsky. Option 1 best captures this essence.

Option 2 mentions 'focus on several aspects of existence' - something not mentioned in the paragraph.

Option 4 which comes close attributes the interest entirely to the three- option 1 mentions it as 'in parts' - hence is an accurate reflection of the paragraph.

Options 3 and 5 do not mention the sources of Subjectivism, Romanticism and Nihilism in any detail, viz St. Augustine, Nietzsche and Dostoyevsky.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #75: (15-Aug-09)

If each inlet tap can fill the tank in 24 seconds, eight of them together can fill it in $24/8 = 3$ seconds

Similarly, the four outlet taps together can empty the tank in $35/4$ seconds.

When all pipes are open, then in one second, $(1/3) - (4/35) = (35 - 12)/105 = 23/105$ of the tank is filled up.

Therefore, in 4 seconds, $92/105$ of the tank is filled up, which is approximately 87.5 %.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #76: (16-Aug-09)

Z particle and W particle are introduced in statement A. Their characteristics are continued in E. AE is the best logical positioning. Therefore, options 3,4 and 5 are eliminated.

Statement C, while continuing the W and Z theme introduces the 'mediation of weak force'. The intermediary in D links to statement C. D also mentions when 'the concept arose'. Therefore, option 2 is eliminated.

Statement B then states what happened decades after that and later.

This sequence makes option 1, ECDB the best choice.

Hence, the correct answer is option 1.

[Discuss the solution with Testfunda users.](#)

Solution #77: (17-Aug-09)

Of the four numbers, three are even and one is odd, hence the sum cannot be even. Hence, the number is not divisible by 2.

$23^4 = (24 - 1)^4$ which will give remainder $(-1)^4 = 1$ on division by 3. 18 and 72 are each divisible by 3.

$2116^2 = (2115 + 1)^2$ which will give a remainder $1^2 = 1$ on division by 3.

Hence, a total of $1 + 1 = 2$ as remainder on division by 3. Hence, the number is not divisible by 3.

$23^4 = (20 + 3)^4$ which gives a remainder $3^4 = 81 = 1$ on division by 5.

The last digit of 18^2 , 72^2 and 2116^2 are 4, 4, and 6 respectively, hence they give remainders of 4, 4, and 1 on division by 5.

Hence, total remainder is $1 + 1 + 4 + 4 = 10$, which is divisible by 5.

Hence, the given number is divisible by 5.

Hence, option 3.

[Discuss the solution with Testfunda users.](#)

Solution #78: (18-Aug-09)

“The one obvious area of excess” in statement E is in the background of the otherwise rather prosperous decade of the 1920s described in statement C. Also note that C cannot be placed anywhere else in the sequence but immediately after A. Therefore, options 1,2 and 4 are eliminated.

Statements E and D seamlessly go together in that order with the theme of housing. Therefore, option 5 is eliminated.

“As a result”, the beginning of statement B helps conclude the discussion explaining the depression of 1929.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #79: (19-Aug-09)

$$a^2 + 2b^2 = 2009b = 41 \times 49b$$

As RHS is divisible by 49, so should be the LHS.

Since the LHS is divisible by 49, it leaves a remainder 0 when divided by 7.

This is possible only if both the parts of the LHS individually leave a remainder 0 when divided by 7 or the sum of their remainders is 7.

Whenever a square is divided by 7, it can only leave 0, 1, 2, or 4 as a remainder.

Hence, the sum of their remainders can never be 7.

Hence, both the remainders have to be 0.

Hence both a and b are divisible by 7.

Let $a = 7x$ and $b = 7y$, then the equation becomes $x^2 + 2y^2 = 287y$

We can still note that RHS is divisible by 7 and so is the LHS.

Hence $x = 7m$ and $y = 7n$, we get $m^2 + 2n^2 = 41n$

$\therefore m^2 = n(41 - 2n)$, now as m is positive integer, we get $n < 21$.

We do trial and error for $n = 1$ to $n = 20$ and check for what value of n we get RHS as perfect square.

We get $n = 16$ as the only solution, which gives $m = 12$

$$\therefore a = 49m = 49 \times 12 \text{ and } b = 49n = 49 \times 16$$

$$\therefore a + b = 49 \times (12+16) = 49 \times 28 = 1372$$

Hence option 1.

[Discuss the solution with Testfunda users.](#)

Solution #80: (20-Aug-09)

The clue is the last line of the paragraph. In spite of much speculation, there appears to be hope now. This would hold true if some new information is now made available. In this context, option 3 fits perfectly.

Option 1 is irrelevant to the paragraph.

Options 2 and 4 introduce new elements such as 'whims of the Lord' and 'the internet' which cannot be deduced from the paragraph.

Option 5 is too strongly worded to be the correct answer option. The penultimate statement of the paragraph signals hopes of demystifying Nostradamus' texts. Therefore to be unravel all of his mysteries is too strong a statement and does not link well with the penultimate statement.

Option 3 ends the paragraph well by giving the reason for the hope mentioned in the penultimate statement of the paragraph.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #81: (21-Aug-09)

We know that Akshay tells the truth only on a single day of the week. If the statement on day 1 is untrue, it means that he tells the truth on either Monday or Tuesday. Now, if the statement on day 3 is untrue as well, it means that he tells the truth on either Wednesday or Friday. Since Akshay tells the truth on only one day, both the statements cannot be simultaneously untrue. So, exactly one of these statements must be true and hence the statement on day 2 is definitely untrue.

Now, we consider two different cases

Case (i):

Statement on day 1 is true.

Hence, the statement on day 3 is untrue. From this, it follows that Akshay tells the truth on either Wednesday or Friday. So, day 1 is either Wednesday or Friday. So, day 2 has to be a Thursday or Saturday. But that would imply that the statement on day 2 is true, which contradicts with our conclusion. Hence, this case is not possible.

Case (ii):

Statement on day 3 is true.

Hence, the statement on day 1 is untrue. From this, it follows that Akshay tells the truth on either Monday or Tuesday. So, day 3 is either Monday or Tuesday. So, day 2 has to be a Sunday or Monday. If it Monday, then it consistent with the above made conclusion that the statement made on day 2 is untrue. So day 2 is a Monday and day 3 is a Tuesday. Therefore, the day on which Akshay tells the truth is Tuesday.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #82: (22-Aug-09)

Statement 3 is a conclusion as well as an assumption. The comparison with the other destinations supports 'world class'

The author mentions the merits of India, comparing certain tourist destinations. Therefore, option 1- 'no better place'- is not an assumption.

The author also does not assume there is no reason- he states there are more reasons to stay- that does not imply that there is no reason to travel to other destinations. Therefore, option 2 can be eliminated.

Option 4 may be inferred as a remote possibility but not as an assumption of the author.

Option 5 is in no way intended or assumed.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #83: (23-Aug-09)

There are 64 cubes forming the larger cube and $64 = 4 \times 4 \times 4$

So, there are 8 smaller cubes such that none of their face is visible. The remaining 56 cubes are to be arranged in a manner so as to minimize the required total. These 56 cubes can be divided into three parts depending on the number of faces visible outside.

i). Cubes with three faces visible

This will be the case for all the 8 corners of the cube. So the smaller cubes numbered 1 to 8 should be arranged to form the corners. The total of the numbers on all the faces of these cubes is

$$(1 + 2 + 3 \dots + 8) \times 3 = 108$$

ii). Cubes with two faces visible

This will be the case for all the cubes which form the edges of the larger cube except the corners. There are 24 such cubes and so, they should be numbered 9 to 32. The total of the numbers on all the faces of these cubes is

$$(9 + 10 + 11 \dots + 32) \times 2 = 984$$

iii). Cubes with one face visible

This will be the case for all the remaining cubes. Therefore, the total number of cubes with only one face visible is $(56 - 8 - 24) = 24$. So these cubes should be numbered 33 to 56. The total of the numbers on all the faces of these cubes is $(33 + 34 + 35 \dots + 56) = 1068$

Therefore, the sum of all these numbers is $108 + 984 + 1068 = 2160$.

This is the minimum sum of all the numbers that appear on the faces of the larger cube.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #84: (24-Aug-09)

The gist of the paragraph is: In law a defendant can stop (terminate) the proceedings against him on certain grounds. This called abatement. The plaintiff can re-initiate it. In equity (natural justice) through abatement the proceedings are suspended until the defect is cured. Option 3 captures this gist.

Option 1 is incorrect because the factual distortion with 'until'. Plaintiff is free to re-initiate the proceedings- abatement is not until such re-initiating takes place.

Option 2 describes Abatement in equity rather than abatement in law.

Option 4 distorts the meaning of the paragraph since terminations are initiated by the defendant and not the plaintiff.

Option 5 does not mention abatement in law in particular.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #85: (25-Aug-09)

Bini did not get a composite number in any of her throws.

Therefore, the outcome of the die in each throw is one out of 1, 2, 3 or 5.

If in any throw the outcome is 1, 3 or 5, the letters Bini can select are odd numbered letters of the alphabet.

Hence, in such a case, Bini can select letters out of A, C, E, G, I, K, M, O, Q, S, U, W and Y.

Therefore, there are 5 vowels and 8 consonants that Bini could use to make words.

The total number of ways she could make 3-letter words using 3 different letters from these 13 letters is ${}^{13}P_3$.

But since a word should contain atleast one vowel, all the three letters of a word cannot be consonants.

The total number of 3-letter words that can be formed from these letters such that they contain only consonants is 8P_3

Therefore, the total number of 3-letter words that Bini could have made such that all the 3 letters are different and each word contains atleast one vowel is

$$\begin{aligned} {}^{13}P_3 - {}^8P_3 &= \frac{13!}{10!} - \frac{8!}{5!} \\ &= 13 \times 12 \times 11 - 8 \times 7 \times 6 \\ &= 1716 - 336 \\ &= 1380 \end{aligned}$$

Now, if in any throw the outcome is 2, the letters Bini can select are the even numbered letters

of the alphabet i.e. B, D, F, H, J, L, N, P, R, T, V, X and Z.

Since, there are no vowels among these letters, no word containing atleast one vowel can be made.

After one throw, Bini creates all the words possible and only then throws the die for the second time.

Now, in each throw, the outcome being one among 1, 2, 3 or 5, the total number of possible outcomes are $4 \times 4 = 16$

We divide these possibilities in two cases

Case (i):

The outcome is 2 in each throw.

In this case the total number of words of the required kind that Bini can make is 0.

Case (ii):

In all the other 15 possibilities except the one mentioned in case (i), the number of possible words would be 1380.

This is because if the outcome is 2 in of the throws and 1, 3 or 5 in the other throw, then the total number of words that Bini can make is

$$0 + 1380 = 1380$$

Even if in both the throws, the outcome obtained is one out of 1, 3 or 5, the words made both the times would be the same and so the total number of words of the required kind will be 1380 only.

So, the answer would differ in both the cases depending on the outcome.

Since we do not know the exact outcome of the two throws, we cannot find the number of words that Bini made. Note that the question does not ask for the number of words that she could have possibly made.

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #86: (26-Aug-09)

The gist of the paragraph is: Carbon emissions from deforestation are an environmental externality- its economics is not accounted for. Landowners have no incentives NOT to cut down trees. To resolve this, 'voluntary' carbon credits (for avoided deforestation) is suggested. There is already a market for this.

Option 5 captures this essence.

Option 1 is too generic. The paragraph is about deforestation in particular and not the entire gamut of 'environmental economics'. Further we cannot ascertain from the paragraph whether voluntary "credits" are 'effective'.

Option 2 is categorical in 'compensates' and 'resolves'- the suggestive element is missing. (In the correct option 'could be' accommodates the suggestion part).

Option 3 is eliminated because of 'must be.'

Option 4 is too categorical in stating that voluntary carbon credits compensate landowners and decreases carbon emissions. The paragraph is suggestive on this issue.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #87: (27-Aug-09)

Let S be the sum of digits of N .

Then by the given condition,

$$N + S = 10000000$$

$$\therefore N = 10000000 - S \quad \dots(i)$$

The largest possible value of N is 9999999.

\therefore The largest possible value of S is 63.

$$\therefore S \leq 63$$

\therefore The minimum value of N is 9999937.

$$\therefore 9999937 \leq N \leq 9999999$$

\therefore The first 5 digits of N are 99999.

\therefore Let last two of N be x and y , respectively.

$$\therefore N = 99999xy$$

$$= 9999900 + 10x + y$$

$$\therefore S = 45 + x + y$$

As the first five digits of the number are divisible by 9, therefore, the remainder that N gives on division by 9 will be same as the remainder given by $x + y$ on division by 9.

Substituting the values of S and N in (i).

$$\therefore 9999900 + 10x + y = 10000000 - (45 + x + y)$$

$$\therefore 11x + 2y = 55$$

The possible values of (x, y) are $(5, 0)$, $(3, 11)$ and $(1, 22)$.

As x and y are the digits of the number N , therefore, $x = 5$ and $y = 0$.

$$\therefore N = 9999950 \text{ and } x + y = 5$$

\therefore The remainder when $x + y$ is divided by 9 is 5.

\therefore The remainder when N is divided by 9 is 5.

Hence, option 2.

[Discuss the solution with Testfunda users.](#)

Solution #88: (28-Aug-09)

Option 1 is ridiculous in 'animal personalities are not recognised' (as if there are animal celebrities).

Option 2 is ridiculous in "Animals have personalities like humans"- they do not have personality like humans but they have personality traits the way humans have personality traits. The option states animals are like humans.

Options 4 and 5 are equally ridiculous for the incorrect comparison made between people and animals. Dogs do not have personalities or personality traits like humans but rather they have personality traits the same way as humans have personality traits.

Option 3 captures the essence of the paragraph perfectly and succinctly.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #89: (29-Aug-09)

Let S be the sum of the first 46 prime numbers.

$\therefore S = 2 + \text{sum of 45 prime numbers greater than 2}$

All prime numbers greater than two are odd.

We know that the sum of even number of odd numbers is even and the sum of odd number of odd numbers is odd.

\therefore The sum of the 45 odd (prime numbers greater than 2) numbers is odd.

\therefore The sum of the 45 prime numbers greater than 2 is odd.

Sum of an odd and an even number is always an odd number.

$\therefore S$ will be an odd number.

\therefore We can eliminate options 1, 3 and 4.

Also, we know that there are 25 prime numbers less than 100.

\therefore The sum of first 25 prime numbers = $2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23 + 29 + 31 + 37 + 41 + 43 + 47 + 53 + 59 + 61 + 67 + 71 + 73 + 79 + 83 + 89 + 97 = 1060$

From the 26th to the 46th prime number each number is greater than 100.

\therefore The sum of numbers from the 26th prime number to the 46th prime number will be greater than 2100.

\therefore The sum of first 46 prime numbers will be greater than 3160.

\therefore We can eliminate option 2.

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #90: (30-Aug-09)

The correct usage in statement 1 is “equivalent” which means ‘amounting to’. “Equal” to is literal as explained in a mathematical equation ‘two plus two is equal to four’. Therefore, options 1 and 2 are eliminated.

In statement 2, “rather....than” is the correct grammatical usage. Therefore, option 4 is eliminated.

In statement 3, “older than” is correct usage. Alternatively it is ‘elder to’.

In statement 4, “Veracious” means ‘truthful’, while “voracious” means ‘ravenous’. “Veracious” fits in here in the context of the statement. A statement cannot possibly be “voracious”.

To “elicit” means ‘to get information’ and is the apt word here; “illicit” means ‘illegal’. Therefore, option 3 is eliminated.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #91: (31-Aug-09)

If $\log_b a_1 > \log_b a_2$ then

I. If $b > 1$ then $a_1 > a_2$... (i)

II. If $0 < b < 1$ then $a_1 < a_2$... (ii)

Also, if $(x - a)(x - b) \geq 0$ then $x \leq a$ or $x \geq b$ when $a < b$... (iii)

And, if $(x - a)(x - b) \leq 0$ then $a \leq x \leq b$ when $a < b$... (iv)

Consider the given inequality,

$$\log_{x-4} (2x^2 - 14x + 21) \geq \log_{x-4} (x^2 - 16)$$

Case 1: $(x - 4) > 1$

If $(x - 4) > 1$ then we can say that $x \in (5, \infty)$.

Then by (i) we get that,

$$2x^2 - 14x + 21 \geq x^2 - 16$$

$$x^2 - 14x + 37 \geq 0$$

$$\therefore (x - 7 - 2\sqrt{3})(x - 7 + 2\sqrt{3}) \geq 0$$

$$\therefore \text{Either } x \leq 7 - 2\sqrt{3} \text{ or } x \geq 7 + 2\sqrt{3} \quad \dots [\text{By (iii)}]$$

But $x > 5$, therefore, $x \geq 7 + 2\sqrt{3}$

$$\therefore x \in [7 + 2\sqrt{3}, \infty) \quad \dots \text{(v)}$$

Case 2: $0 < (x - 4) < 1$

If $0 < (x - 4) < 1$ then $x \in (4, 5)$.

Then by (ii) we get that,

$$2x^2 - 14x + 21 \leq x^2 - 16$$

$$x^2 - 14x + 37 \leq 0$$

$$\therefore (x - 7 - 2\sqrt{3})(x - 7 + 2\sqrt{3}) \leq 0$$

$$\therefore 7 - 2\sqrt{3} \leq x \leq 7 + 2\sqrt{3} \quad \dots \text{[By (iv)]}$$

$$\therefore 3.536 \leq x \leq 10.464$$

$$\therefore 4 < x < 5$$

But $2x^2 - 14x + 21 < 0$ for some $x \in (4, 5)$.

\therefore We have to find x such that $2x^2 - 14x + 21 > 0$ and $x \in (4, 5)$.

$$2x^2 - 14x + 21 > 0$$

$$\therefore \left(x - \frac{7 + \sqrt{7}}{2}\right)\left(x - \frac{7 - \sqrt{7}}{2}\right) > 0$$

$$\therefore \text{Either } x < \frac{7 - \sqrt{7}}{2} \text{ or } x > \frac{7 + \sqrt{7}}{2}$$

$$\therefore \text{Either } x < 2.178 \text{ or } x > 4.82$$

$$\text{As } 4 < x < 5, \text{ therefore, } x > \frac{7 + \sqrt{7}}{2}$$

$$x \in \left(\frac{7 + \sqrt{7}}{2}, 5\right) \quad \dots \text{(vi)}$$

$$\text{From (v) and (vi), we have, } x \in \left(\frac{7 + \sqrt{7}}{2}, 5\right) \cup [7 + 2\sqrt{3}, \infty)$$

Hence, option 4.

[Discuss the solution with Testfunda users.](#)

Solution #92: (01-Sep-09)

One of the meanings of 'cast' as a verb is to 'make suitable or accordant'; 'tailor'. 'Caste' is a noun which means 'a hereditary social group in Hinduism' and is inappropriate in this context.

Therefore, options 2 and 4 are eliminated.

'Claque' (n) means 'a group of persons hired to applaud an act or performer' and is the appropriate word here. 'Clack' (n) means 'chatter'.

'Faun' (n) means 'an imaginary creature, half man and half goat' and is the apt word here. 'Fawn' (v) means 'to show affection'; as a noun 'fawn' is 'a young deer'. Therefore, we can eliminate option 1.

'Greave' (n) means 'a piece of armour for the shin'. 'Grieve' (v) means 'to feel sorrow' and is not the appropriate word here.

One of the meanings of 'flare' (v) is 'to expand or open outward in shape'. 'Flair' (n) generally refers 'to skill or tendency'. 'Flare' is appropriate here. Therefore, we can eliminate option 5.

Hence, the correct answer is option 3.

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Solution #93: (02-Sep-09)

From statement A alone.

Let the integers be in AP with the first term a and common difference d .

n^{th} term of the AP = $T_n = a + (n - 1)d$

$$\text{Average of } n - 1 \text{ terms of the AP} = \frac{a + a + d + \dots + a + (n - 2)d}{n - 1}$$

The value of the common difference, d , is known but the value of the first term, a , is not known.

∴ We cannot find the average of the first $n - 1$ integers on the basis of this statement alone.

∴ Statement alone A is insufficient.

From statement B alone.

A is the coefficient of the second highest power of x in the given equation.

∴ $-A$ is the sum the n roots of the given equation

∴ $-A$ is the sum the n integers of the given set.

We need to know the n^{th} integer of the set, to find the average of the first $n - 1$ integers of the set.

∴ Statement B alone is insufficient.

Combining statement A and B.

We find that we know both the sum and the common difference of n integers in AP.

∴ We can calculate first term a .

∴ We can calculate the n integers of the set.

But neither its is given that the set is arranged in ascending or descending order nor do we know the n^{th} element of the set.

∴ We cannot find the average of first $n - 1$ integers of the set using statements A and B both.

Hence, option 5.

[Discuss the solution with Testfunda users.](#)

Solution #94 (03-Sep-09)

“Obtuse” implies ‘such bluntness as makes one insensitive in perception or imagination’ and is the correct word here. “Abstruse” is ‘difficult to understand’. Therefore, options 2 and 4 are eliminated.

“Precipitous” means ‘steep or perpendicular’. “Precipitate” implies ‘reckless’.

“Mucus” is the noun- the secretion and is the correct word in this context; “mucous” is adjective as in ‘mucous membrane’. Therefore, option 1 is eliminated.

“Tortuous” among other things means ‘intricate or circuitous’. “Tortulous” means ‘swelled like a knotted cord’. “Tortuous” is the correct word contextually.

“Disinterested” means ‘impartial or unbiased’; “uninterested” implies ‘not interested- lacking in concern’ and is the correct word here. Therefore, option 3 is eliminated.

Hence, the correct answer is option 5.

[Discuss the solution with Testfunda users.](#)

Solution #95: (04-Sep-09)

From statement A alone.

We know a sequence of 1000 consecutive positive integers that has no prime number.

Now if we reduce the every number of the sequence by 1.

We might increase the number of primes in the given sequence by 1 or decrease the number of primes by 1 or the number of primes in the given sequence will remain same.

∴ This process can change the number of prime by 1.

If this process is continued till the first 1000 positive integers then there will be at least 50 primes in this sequence (1-100 has 25).

∴ We must have encountered one sequence of 1000 numbers having exactly 5 prime numbers in this process.

∴ Statement A alone is sufficient.

From statement B alone.

If we decrease the first term by 1 and go to the first 1000 positive integers, we are not sure if the number of primes are decreasing or increasing at any point of time so can't say anything conclusive.

If we add 1 to each number of the sequence even then we can't say whether primes will decrease or increase.

∴ Statement B alone is insufficient.

Hence, option 1.

[Discuss the solution with Testfunda users.](#)

Solution #96: (05-Sep-09)

“Complaisant” means ‘obliging’ and is the appropriate word here; ‘complacent’ means ‘unconcerned, self-satisfied’. Therefore, options 1 and 4 are eliminated.

“Devisor” means ‘a testator; one, who bequeaths (through a will) one’s real estate’. “Deviser” is ‘a planner or contriver’. Therefore, option 5 is eliminated.

“Auger” is ‘a tool’ and is the appropriate word here; “augur” means ‘to foretell’. Therefore, option 2 is eliminated.

“Climatic” is related to ‘the climate’; “climactic” is related to ‘the climax’ and is the appropriate word.

A “caret” is ‘(^) mark made to show the place where something is to be inserted’; “carat” refers to ‘purity/weight of gold diamonds etc’. ‘Caret’ is the appropriate word here.

Hence, the correct answer is option 3.

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Solution #97: (06-Sep-09)

Let the base of the number system used in mars be n .

$\therefore (15)_n, (40)_n, (k01)_n$ and $(122)_n$ are in arithmetic progression.

When expressed in the decimal system, these numbers will be $(5 + n), 4n, (1 + kn^2)$ and $(n^2 + 2n + 2)$, respectively.

If the numbers are in AP in base n then their corresponding values in base 10 will also be in AP.

$\therefore (5 + n), 4n, (1 + kn^2)$ and $(n^2 + 2n + 2)$ are in arithmetic progression in the decimal number system.

Since in a AP, the difference between any two consecutive terms is equal,

$$\therefore 4n - (5 + n) = (1 + kn^2) - 4n$$

$$\therefore 7n - kn^2 = 6 \quad \dots(i)$$

$$\text{Also, } (1 + kn^2) - 4n = (n^2 + 2n + 2) - (1 + kn^2)$$

$$\therefore 2kn^2 = n^2 + 6n$$

$$\therefore 2kn = n + 6 \quad \dots[\because n \neq 0]$$

$$\therefore 2kn - n = 6 \quad \dots(ii)$$

Equating (i) and (ii), we get

$$7n - kn^2 = 2kn - n$$

$$\therefore 7 - kn = 2k - 1 \quad \dots[\because n \neq 0]$$

$$\therefore 2k - 8 + kn = 0$$

$$\therefore k = \frac{8}{n+2}$$

For k to be an integer, we can take $n = 0, 2$ or 6 .

But $n = 0$ is not possible.

For $n = 2, k = 2$ and for $n = 6, k = 1$

Since n is the base of the number system and $k01$ is the number expressed in the system to the base $n, k < n$. Therefore, $n = 2$ is not possible.

So $k = 1$ and $n = 6$.

Therefore expressing the number of chocolates in the decimal system, we get

$$(15)_6 = 11$$

$$(40)_6 = 24$$

$$(k01)_6 = (101)_6 = 37$$

$$(122)_6 = 50$$

So the number of chocolates with Jadoo, Badoo, Kadoo and Ladoo are 11, 24, 37 and 50, respectively.

\therefore The total number of chocolates that Aarav counted in the decimal number system = $11 + 24 + 37 + 50 = 122$

\therefore Option 1 can be eliminated.

Now $(122)_{10}$ can be expressed as 442 and 233 in base 5 and base 7 respectively.

\therefore Options 3 and 2 can also be eliminated.

$$\text{Now } (122)_{10} = (322)_6 = (233)_7$$

$\therefore (122)_{10}$ cannot take any value between 233 and 322 in any base.

$\therefore 278$ cannot be a valid representation of $(122)_{10}$

Hence, option 4.

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Solution #98: (07-Sep-09)

Option 1 is incorrect in "The Gay Science dealing with the origin ..."

Option 2 and 4 are incorrect because of 'two well-defined periods'- there are three.

Option 5 is incorrect because of 'the Romantic perspective followed by Schopenhauer, Wagner...'

The "Romantic perspective" and the influence of 'Schopenhauer and Wagner' is the same period.

Option 3 captures the essence of the paragraph without distorting the original ideas.

Hence, the correct answer is option 3.

[Discuss the solution with Testfunda users.](#)

Solution #99: (08-Sep-09)

Let $N = abcdefghij$ be a multiple of 11111 such that $a, b, c, d, e, f, g, h, i$ and j are distinct.

$\therefore a, b, c, d, e, f, g, h, i$ and j will be equal to 1, 2, ..., 9 in some order.

$\therefore a + b + c + d + e + f + g + h + i + j = 1 + 2 + 3 + \dots + 9 = 45$.

\therefore The sum of digits of N is divisible by 9.

$\therefore N$ is divisible by 9.

$$\text{Now, } 11111 = 41 \times 271$$

$$\therefore \text{gcd}(11111, 9) = 1$$

$\therefore N$ has to be divisible by 11111 and 9 both.

$\therefore N$ is divisible by 99999.
 $\therefore N = abcde \times 100000 + fghij$ is divisible by 99999.
 $\therefore abcde + fghij$ is divisible by 99999.
 $abcde + fghij = 99999k$, for some natural number k .
 But $abcde < 99999$ and $fghij < 99999$
 $\therefore abcde + fghij < 199998$
 $\therefore abcde + fghij = 99999$
 $\therefore a + f = b + g = c + h = d + i = e + j = 9$
 $\therefore (a, f), (b, g), (c, h), (d, i), (e, j)$ can take values (0, 9), (1, 8), (2, 7), (3, 6) and (4, 5).
 As $a = 0$ is not possible, therefore, we have two cases.

Case 1: $(a, f) \neq (0, 9)$ or $(9, 0)$

(a, f) can take four possible pairs of values (1, 8), (2, 7), (3, 6) and (4, 5). Also, each value can swap positions, i.e. (a, f) can be both (1, 8) and (8, 1) in two ways.

\therefore Number of possible values of $(a, f) = 4 \times 2!$

(b, g) can take four possible pairs of values if the value taken by the pair (a, f) are not considered. Also, each value can swap positions in two ways.

\therefore Number of possible values of $(b, g) = 4 \times 2!$

Similarly, number of possible values of $(c, h) = 3 \times 2!$, number of possible values of $(d, i) = 2 \times 2!$ and number of possible values of $(e, j) = 1 \times 2!$

Total possible values from **case 1** = $(4 \times 4 \times 3 \times 2 \times 1) \times (2!)^5$
 $= 4 \times 4! \times 2^5$

Case 2: $(a, f) = (9, 0)$

(a, f) can take one value (9, 0). The values can't swap positions as a cannot be zero.

(b, g) can take four possible pairs of values (1, 8), (2, 7), (3, 6) and (4, 5). Also, each value can swap positions, i.e. (b, g) can be both (1, 8) and (8, 1) in two ways.

\therefore Number of possible values of $(b, g) = 4 \times 2!$

Similarly, number of possible values of $(c, h) = 3 \times 2!$, number of possible values of $(d, i) = 2 \times 2!$ and number of possible values of $(e, j) = 1 \times 2!$

Total possible values from **case 1** = $(1 \times 4 \times 3 \times 2 \times 1) \times (2!)^4$
 $= 4! \times 2^4$

Number of 10-digit positive integers with distinct digits that are multiples of 11111
 $= 4 \times 4! \times 2^5 + 4! \times 2^4$
 $= 3456$

Hence, option 3.

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Solution #100: (09-Sep-09)

The probable starters by comparison are statements C and D. Statements A and B get easily eliminated in comparison to C and D. This eliminates options 4 and 5.

DA and CB are mandatory pairs.

Evaluating options 1, 2 and 3, option 1 gets eliminated because of the ED pairing in option 1- which makes no sense.

The pairing AB in option 3 is similarly illogical.

Therefore, the most logical sequence is DACBE.

Hence, the correct answer is option 2.

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