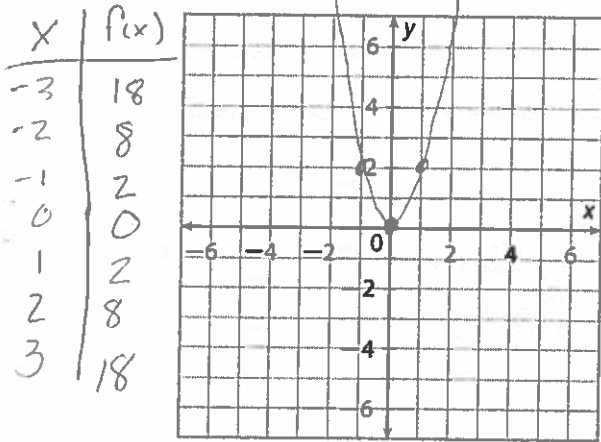


EXERCISES

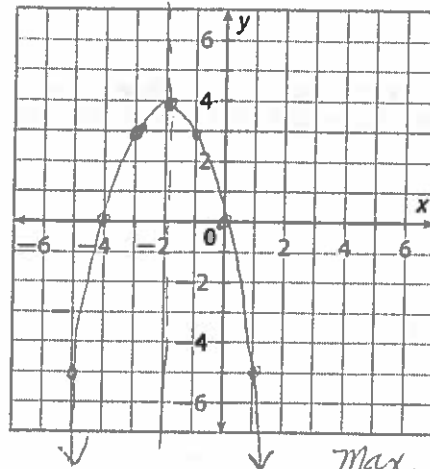
Graph each quadratic function. Give the minimum or maximum value and the axis of symmetry. (Lessons 19.1, 19.2)

1. $f(x) = 2x^2$



Min (0, 0)
Axis of Sym: $x = 0$

2. $g(x) = -(x + 2)^2 + 4$

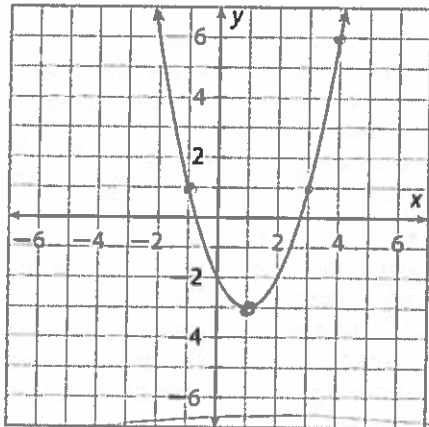


Max: (-2, 4)
Axis of Sym: $x = -2$

x	g(x)
-3	3
-2	4
-1	3
0	0
1	-5
2	-12
3	-21

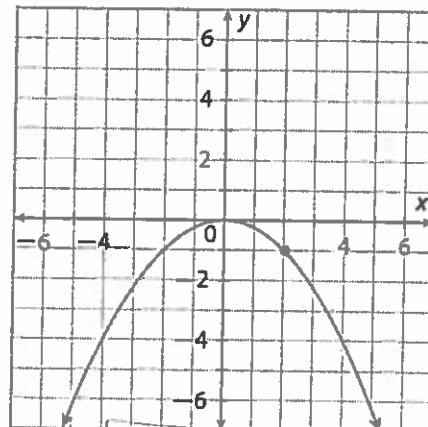
Write the equation for the function in each graph, in vertex form. (Lesson 19.3)

3.
 $y = a(x-1)^2 + 3$
 $6 = a(4-1)^2 + 3$
 $6 = 9a + 3$
 $3 = 9a$
 $\frac{1}{3} = a$
 $V(1, 3)$
 Endpt (4, 6)



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

4.



$f(x) = \frac{1}{4}(x-0)^2 + 0$

$V(0, 0)$
 endpt (2, 1)
 $y = a(x-0)^2 + 0$
 $1 = 4a$
 $\frac{1}{4} = a$

MODULE PERFORMANCE TASK

Throwing for a Completion

Professional quarterbacks can throw a football to a receiver with a velocity of 66 feet per second or greater. If a quarterback throws a pass with that velocity at a 30° angle with the ground, then the initial vertical velocity is 33 feet per second. How can you use the formula $h = -16t^2 + vt + h_0$ to describe the quarterback's pass? Find the maximum height that the football reaches, and then find the total amount of time that the pass is in the air.