Practice 18.1 & 18.3a

Name_____

Find the vertex of the parabola.
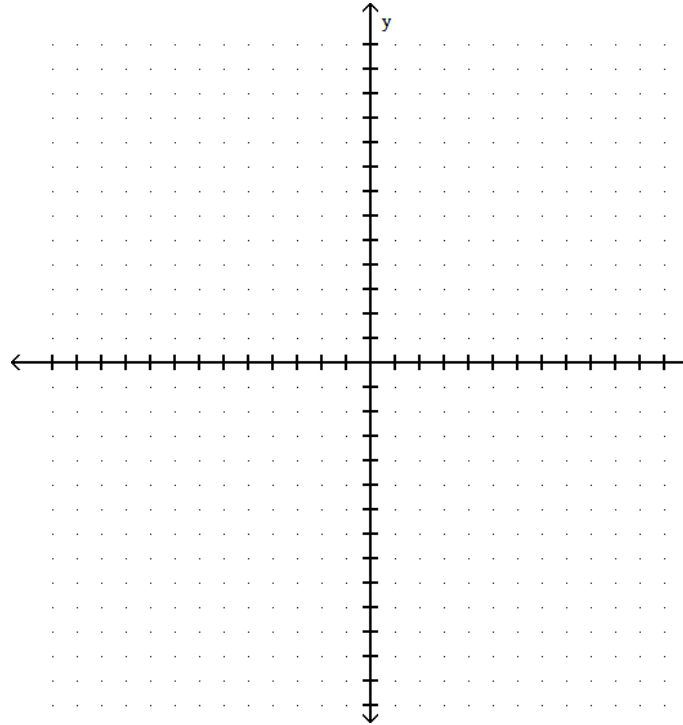
1) $f(x) = 3x^2 - 2$

2) $f(x) = 5x - x^2$

3) $f(x) = \frac{1}{3}x^2 - \frac{2}{3}x - \frac{11}{3}$
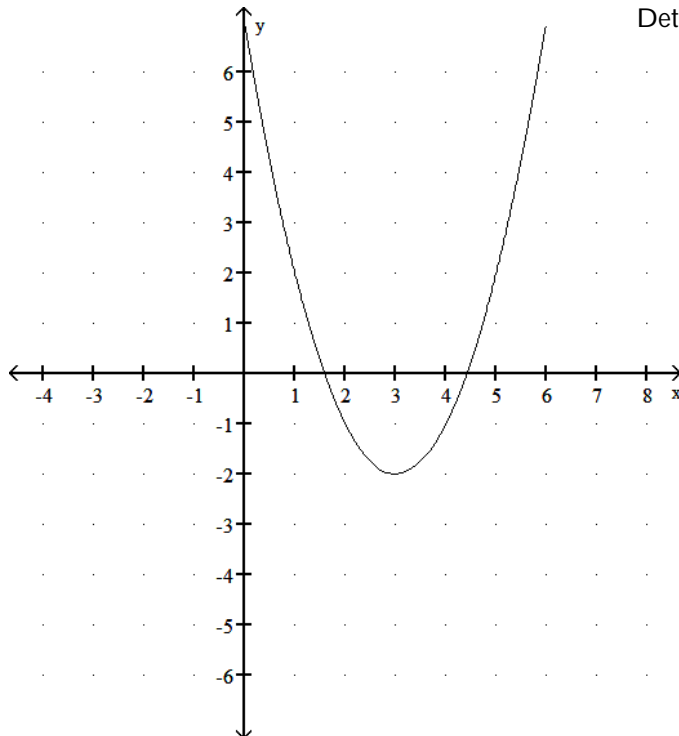
Use the graph of f to evaluate each expression.

4) $f(4)$, $f(1)$

Graph.

5) $f(x) = x^2 + 2x - 1$
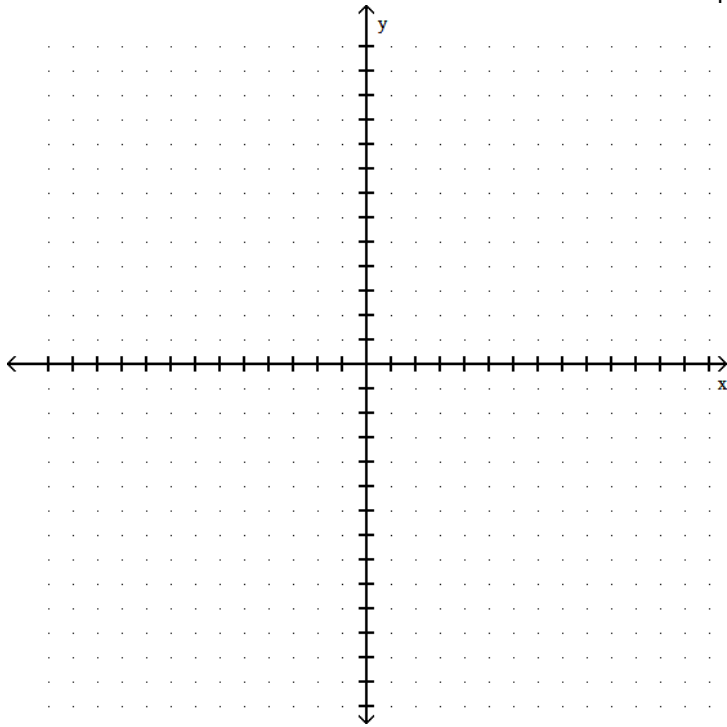

Determine whether the equation is quadratic.

6) $x^2 + 5x - 3 = 0$

7) $3x + 5 = 0$

Graph.

8) $f(x) = 3x^2 + 2x - 2$

Find the minimum y-value on the graph of y = f(x).

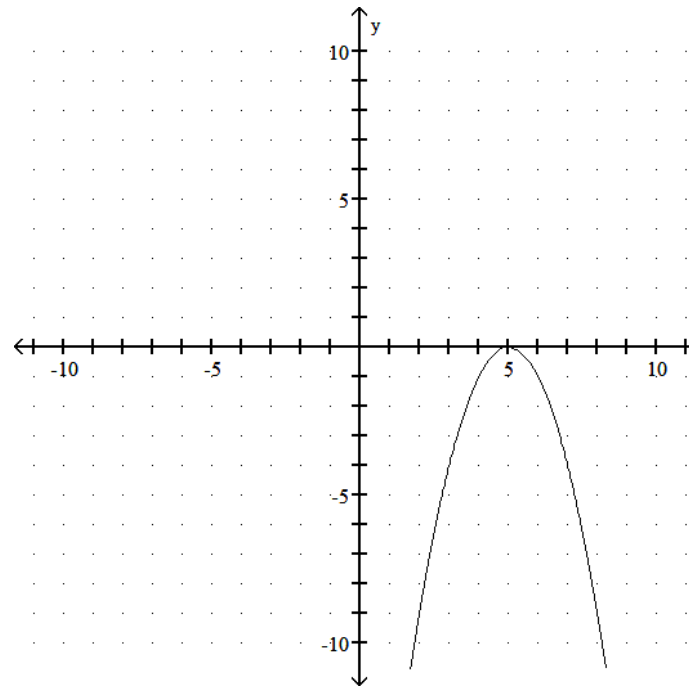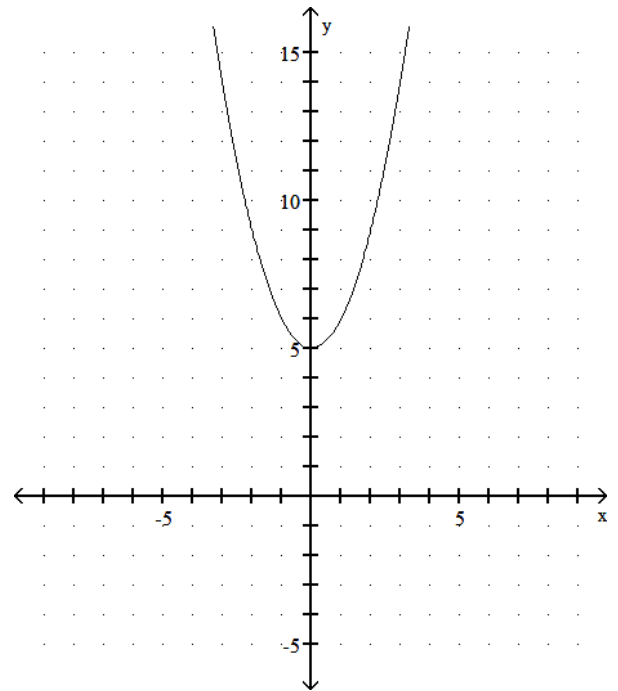9) $f(x) = x^2 - 12x$

Find the maximum y-value on the graph of y = f(x).

10) $f(x) = 4x - x^2$

The graph of $ax^2 + bx + c$ is given. Use this graph to solve $ax^2 + bx + c = 0$, if possible.

11)

12)

2

13)
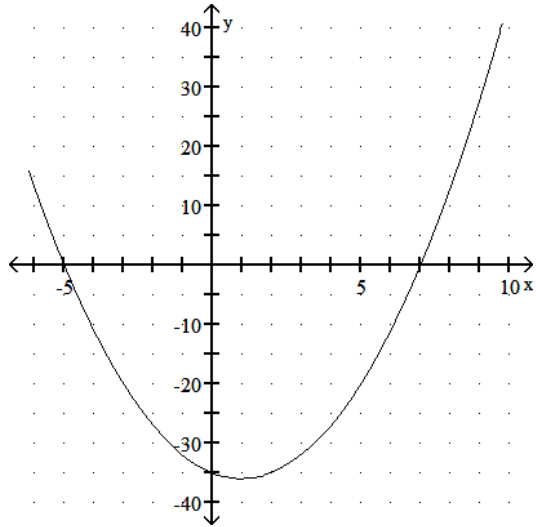
Use the square root property to solve the equation.

18) $(x + 16)^2 = 36$

19) $(x + 6)^2 = 13$

20) $(x - 5)^2 = -81$

Solve quadratic equation by factoring.

14) $x^2 - x = 42$

21) $x^2 + 3 = 67$

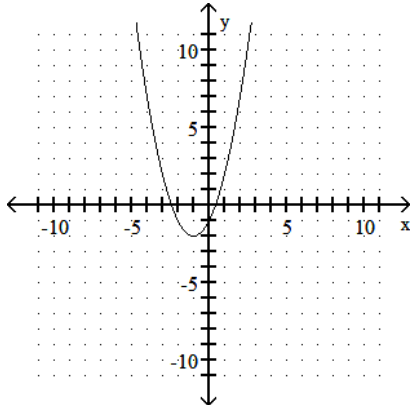15) $4x^2 - 28x + 40 = 0$

22) $-3x^2 - 13 = -61$

16) $6x^2 + 13x - 7 = -13$
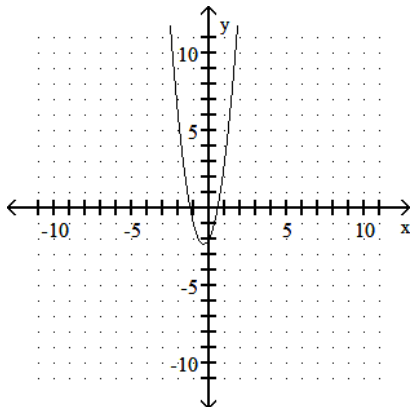
17) $5(5x^2 - 4x) = 21$

3

1) (0, -2)

2) $\left(\dfrac{5}{2}, \dfrac{25}{4}\right)$

3) (1, -4)

4) -1, 2

5)

6) Yes

7) No

8)

9) -36

10) 4

11) 5

12) No real solutions

13) -5, 7

14) -6, 7

15) 2, 5

16) $-\dfrac{2}{3}, -\dfrac{3}{2}$

17) $-\dfrac{3}{5}, \dfrac{7}{5}$

18) -22, -10

19) $-6 \pm \sqrt{13}$

20) No real solutions

21) ±8

22) ±4