

Name _____

Determine if the parabola whose equation is given opens upward or downward.

1) $y = x^2 - 2x - 4$

2) $y = x^2 + 2x + 1$

3) $y = -x^2 + 2x - 4$

4) $y = -x^2 - 2x + 1$

5) $y = 4x^2 - 2x - 4$

6) $y = 2x^2 - 2x - 7$

7) $y = -4x^2 - 2x - 7$

8) $y = -3x^2 - 2x - 8$

Find the x-intercepts and the y-intercept for the parabola whose equation is given. If an intercept is an irrational number, round it to the nearest tenth.

9) $y = x^2 - 3$

10) $y = x^2 - 5$

11) $y = x^2 + 9x$

12) $y = x^2 + 12x$

13) $y = -x^2 + 15x - 56$

14) $y = -x^2 + 13x - 42$

15) $y = 2x^2 - 9x + 7$

16) $y = 2x^2 + 8x - 10$

$$17) y = 2x^2 + 2x - 112$$

$$18) y = 2x^2 - 6x + 4$$

$$19) y = x^2 + 4x - 7$$

$$20) y = x^2 - 5x + 1$$

$$21) y = x^2 - 4$$

$$22) y = -x^2 + 9x - 20$$

$$23) y = 2x^2 + 9x - 18$$

$$24) y = x^2 + 10x$$

$$25) y = 2x^2 - 12x - 54$$

$$26) y = x^2 + 4x - 7$$

Find the vertex for the parabola whose equation is given.

$$27) y = x^2 + 6$$

$$28) y = x^2 + 5$$

$$29) y = x^2 - 14x + 9$$

$$30) y = x^2 + 8x + 6$$

$$31) y = -x^2 - 10x - 8$$

$$32) y = -x^2 - 6x - 8$$

$$33) y = 5x^2 + 10x - 1$$

$$34) y = -7x^2 - 14x - 6$$

$$35) y = x^2 + 7x - 7$$

$$36) y = x^2 + 11x - 4$$

$$45) y = -3(x - 1)^2 + 3$$

$$37) y = -x^2 - 3x - 2$$

$$46) y = -4(x + 5)^2 + 1$$

$$38) y = -x^2 - 3x + 1$$

$$47) y = -(x - 1)^2 + 4$$

$$39) y = 2x^2 - 16x + 2$$

$$48) y = -(x - 1)^2 + 9$$

$$40) y = 2x^2 - 8x - 1$$

$$49) y = x^2 - 2x - 8$$

$$41) y = x^2 + 4x$$

$$50) y = 4x^2 - 8x - 3$$

$$42) y = x^2 - 11x$$

$$51) y = -x^2 - 5x - 5$$

$$43) y = (x + 6)^2 - 5$$

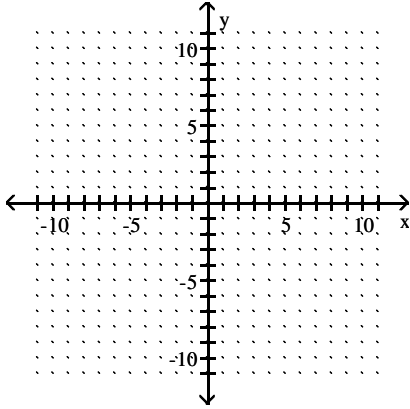
$$52) y = -3x^2 - 12x - 6$$

$$44) y = (x - 2)^2 - 5$$

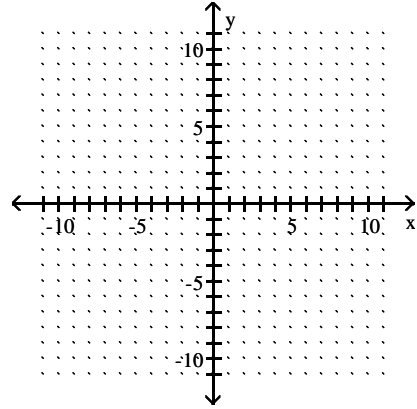
$$53) y = (x - 4)^2 - 2$$

Graph the parabola whose equation is given.

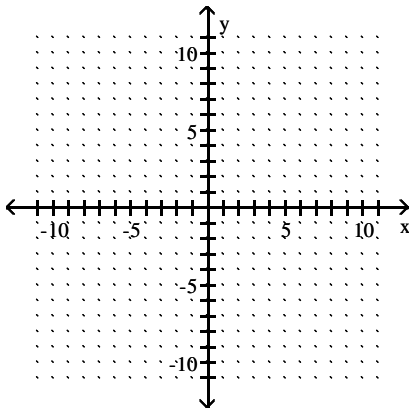
54) $y = x^2 + 4x - 5$



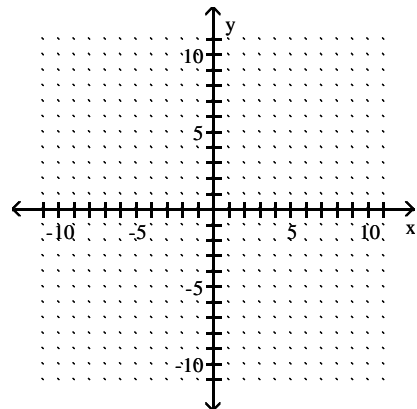
57) $y = -x^2 - 4x - 3$



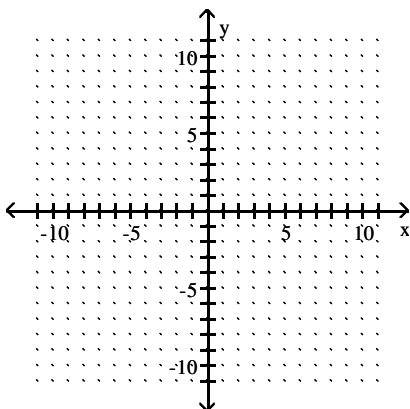
55) $y = x^2 + 6x + 8$



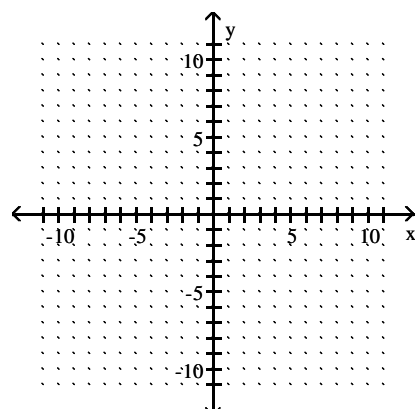
58) $y = x^2 - 6x + 8$



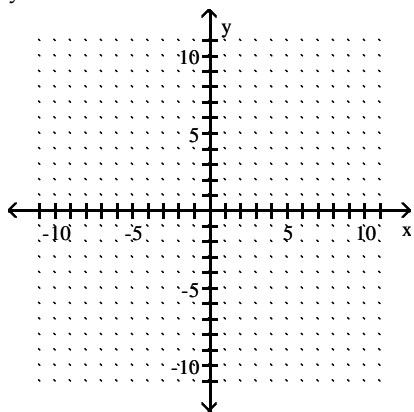
56) $y = -x^2 - 2x + 3$



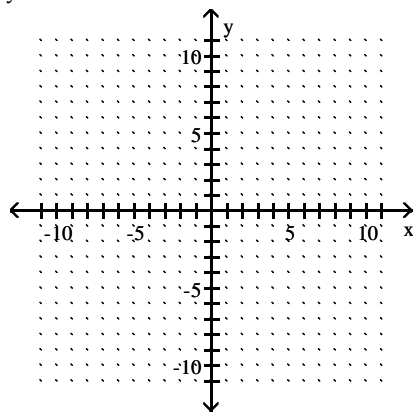
59) $y = x^2 - 2x - 8$



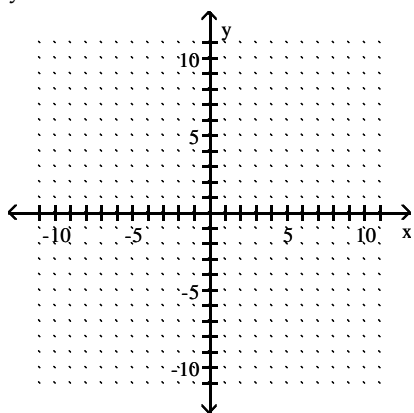
$$60) y = -x^2 + 6x - 8$$



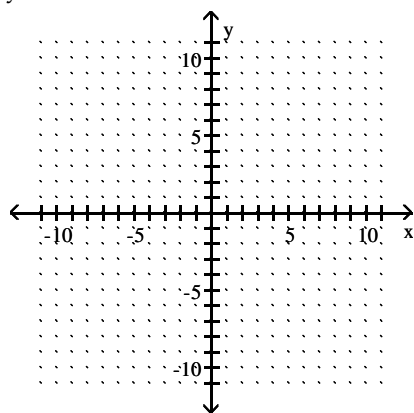
$$63) y = x^2 + 1$$



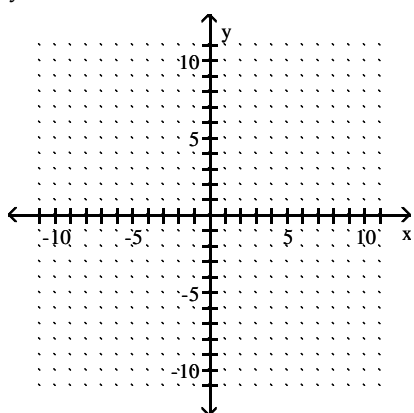
$$61) y = -x^2 + 6x - 5$$



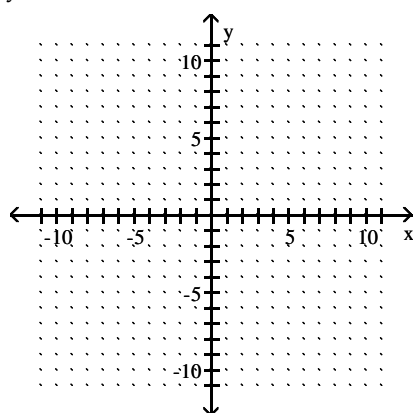
$$64) y = x^2 - 6x$$



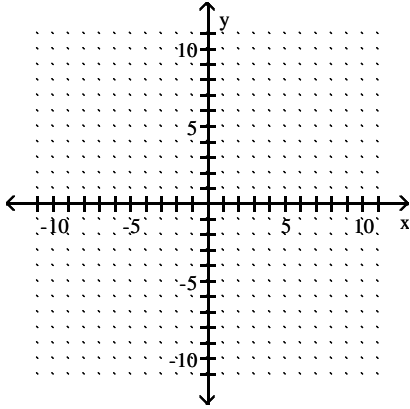
$$62) y = x^2 + 9$$



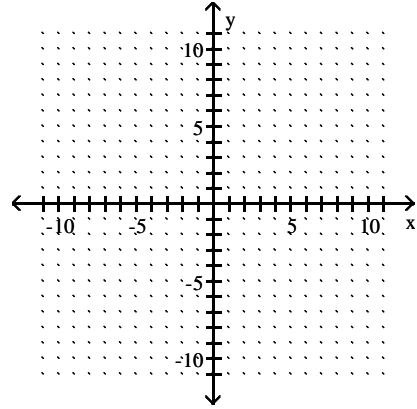
$$65) y = x^2 - 4x$$



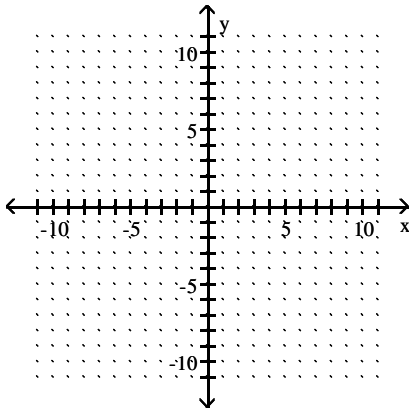
$$66) y = x^2 + 2x - 8$$



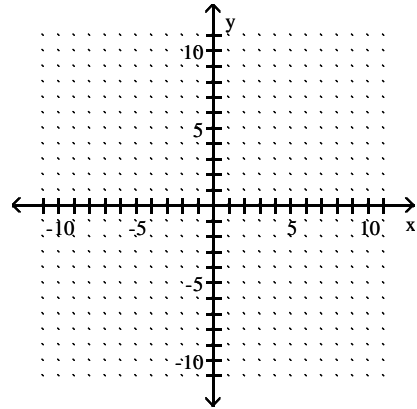
$$69) y = -x^2 - 2x + 8$$



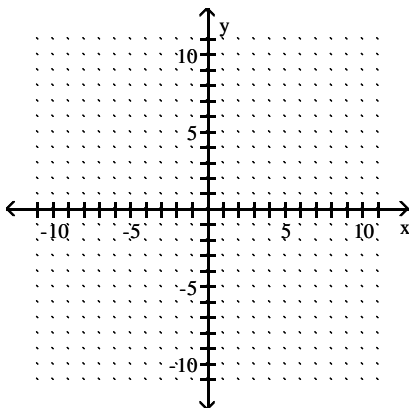
$$67) y = x^2 - 2x - 8$$



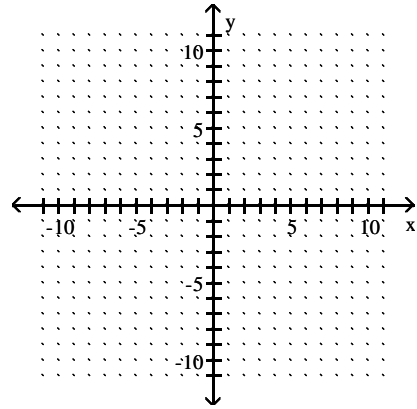
$$70) y = 4x^2 + 24x + 35$$



$$68) y = -x^2 - 2x + 3$$

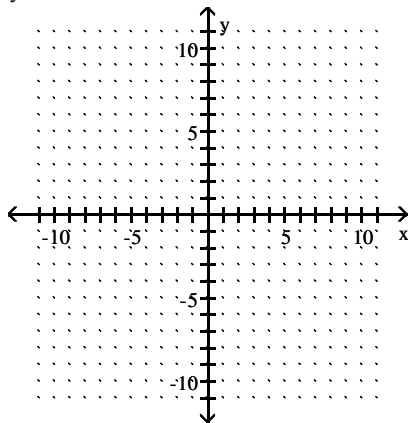


$$71) y = -2x^2 + 20x - 49$$

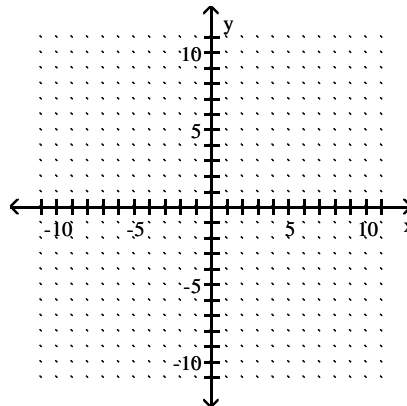


Sketch by hand the graph of the function. Give the coordinates for the vertex.

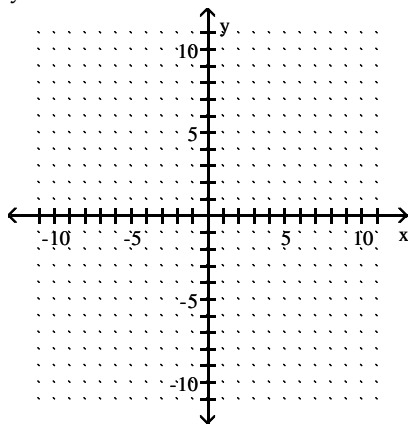
72) $y = x^2 - 4$



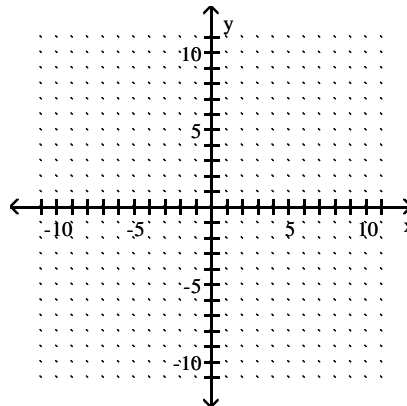
74) $y = x^2 + 4x + 8$



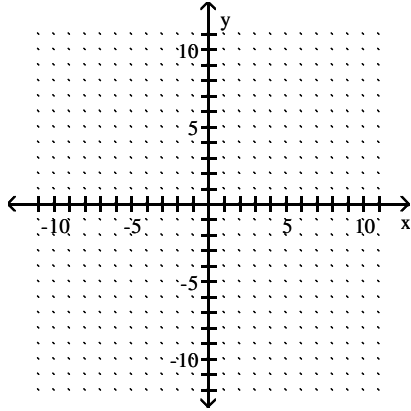
73) $y = x^2 + 5x + 4$



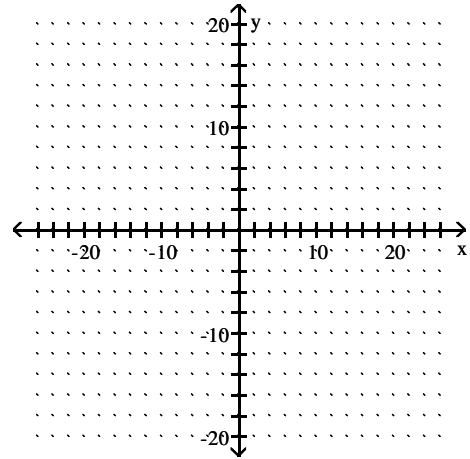
75) $y = -x^2 - 4x - 5$



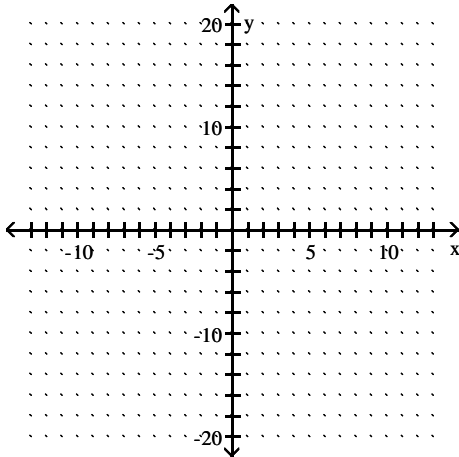
76) $y = 2x^2 - 12x + 20$



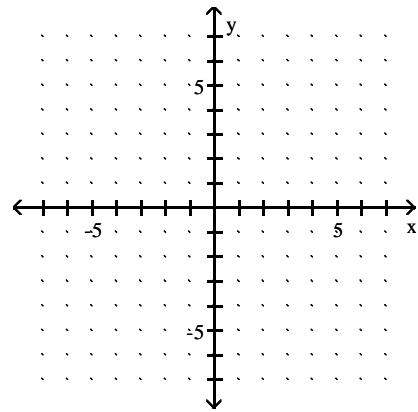
78) $y = 0.4x^2 + 2.7x - 6.3$



77) $y = -0.5x^2 + 0.6x + 1.1$

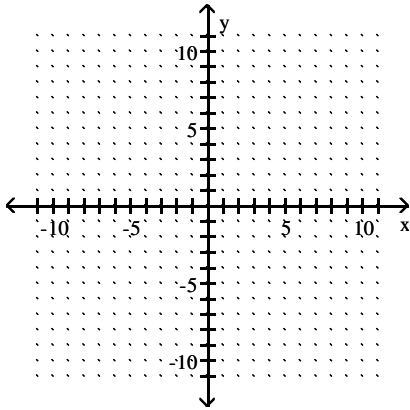


79) $3.3y - 6.2x = 7.1x^2 - 2.8$

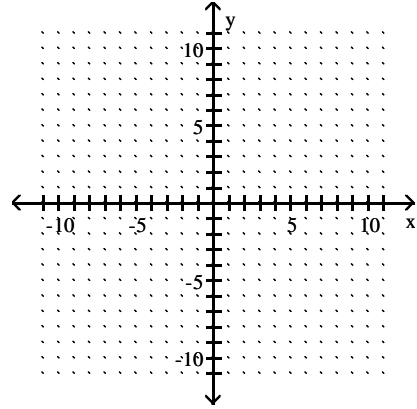


Find the vertex, the y-intercept, and the x-intercepts (if any exist), and graph the function.

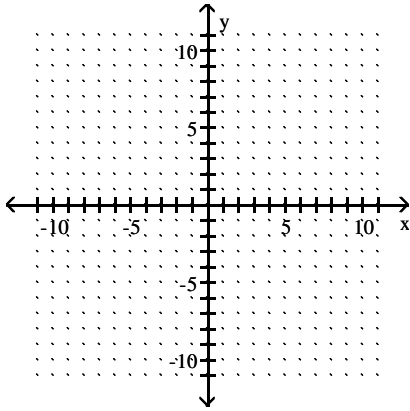
80) $y = x^2 + 2x - 3$



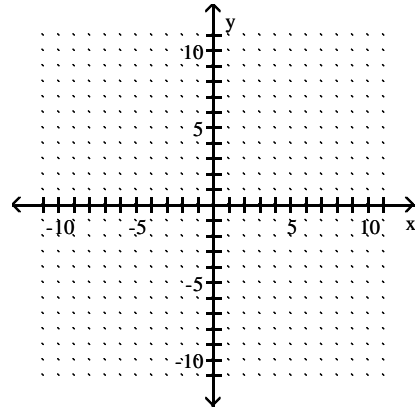
83) $y = -x^2 - 2x + 3$



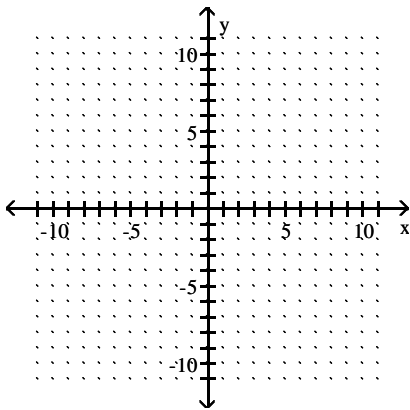
81) $y = 11x^2 - 22x$



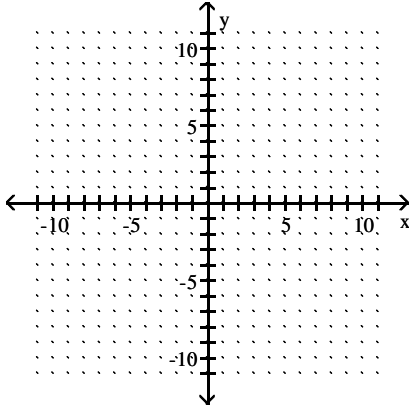
84) $y = x^2 - 4x + 4$



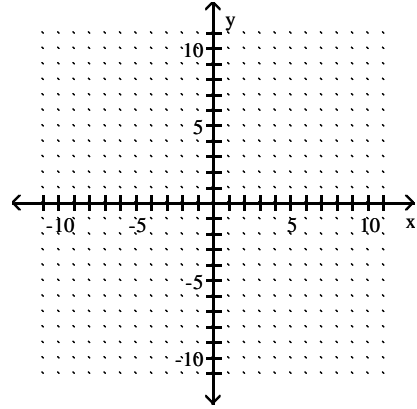
82) $y = -5x^2 - 10x$



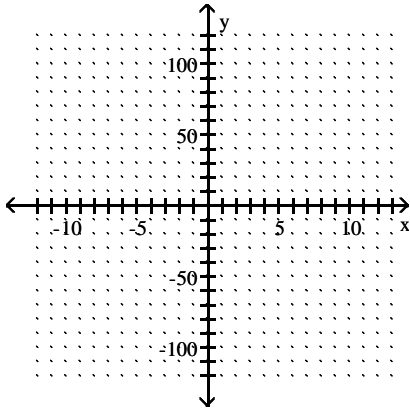
85) $y = -x^2 - 4x - 4$



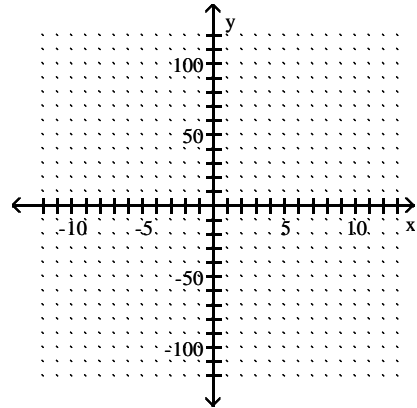
88) $y = x^2 + 2x + 1$



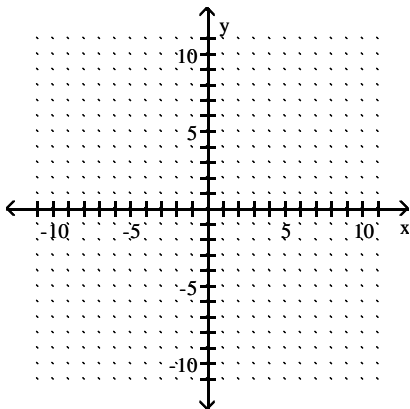
86) $y = x^2 - 16$



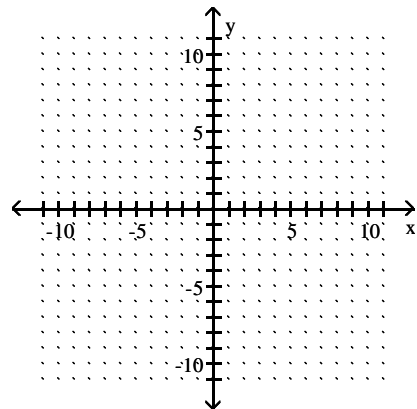
89) $y = x^2 - 25$



87) $y = x^2 - 2x - 8$



90) $y = -6x^2 - 12x$



Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

- 1) Upward
- 2) Upward
- 3) Downward
- 4) Downward
- 5) Upward
- 6) Upward
- 7) Downward
- 8) Downward
- 9) x-intercepts: 1.7 and -1.7; y-intercept: -3
- 10) x-intercepts: 2.2 and -2.2; y-intercept: -5
- 11) x-intercepts: 0 and -9; y-intercept: 0
- 12) x-intercepts: 0 and -12; y-intercept: 0
- 13) x-intercepts: 7 and 8; y-intercept: -56
- 14) x-intercepts: 6 and 7; y-intercept: -42
- 15) x-intercepts: 1 and 3.5; y-intercept: 7
- 16) x-intercepts: -5 and 1; y-intercept: -10
- 17) x-intercepts: 7 and -8; y-intercept: -112
- 18) x-intercepts: 2 and 1; y-intercept: 4
- 19) x-intercepts: 1.3 and -5.3; y-intercept: -7
- 20) x-intercepts: 4.8 and 0.2; y-intercept: 1
- 21) x-intercepts: 2 and -2; y-intercept: -4
- 22) x-intercepts: 4 and 5; y-intercept: -20
- 23) x-intercepts: -6 and 1.5; y-intercept: -18
- 24) x-intercepts: 0 and -10; y-intercept: 0
- 25) x-intercepts: 9 and -3; y-intercept: -54
- 26) x-intercepts: 1.3 and -5.3; y-intercept: -7
- 27) (0, 6)
- 28) (0, 5)
- 29) (7, -40)
- 30) (-4, -10)
- 31) (-5, 17)
- 32) (-3, 1)
- 33) (-1, -6)
- 34) (-1, 1)
- 35) $\left(-\frac{7}{2}, -\frac{77}{4}\right)$
- 36) $\left(-\frac{11}{2}, -\frac{137}{4}\right)$
- 37) $\left(-\frac{3}{2}, \frac{1}{4}\right)$
- 38) $\left(-\frac{3}{2}, \frac{13}{4}\right)$
- 39) (4, -30)
- 40) (2, -9)
- 41) (-2, -4)
- 42) $\left(\frac{11}{2}, -\frac{121}{4}\right)$
- 43) (-6, -5)
- 44) (2, -5)

Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

45) (1, 3)

46) (-5, 1)

47) (1, 4)

48) (1, 9)

49) (1, -9)

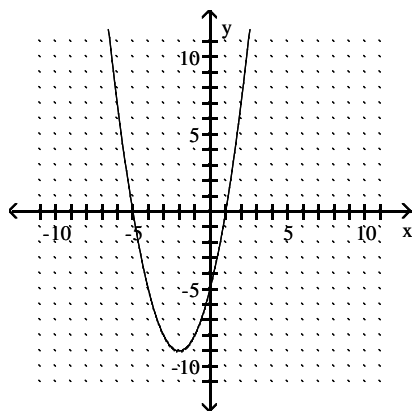
50) (1, -7)

51) $\left(-\frac{5}{2}, \frac{5}{4}\right)$

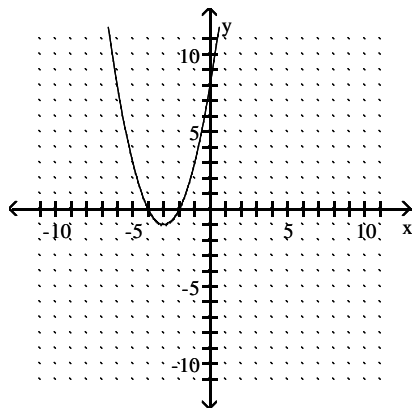
52) (-2, 6)

53) (4, -2)

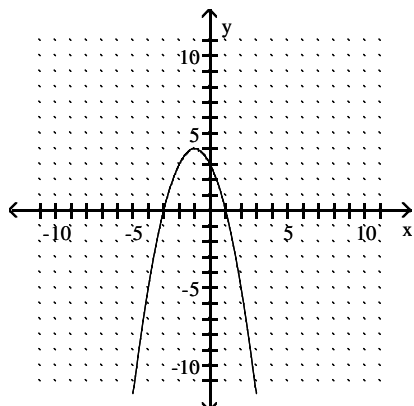
54)



55)



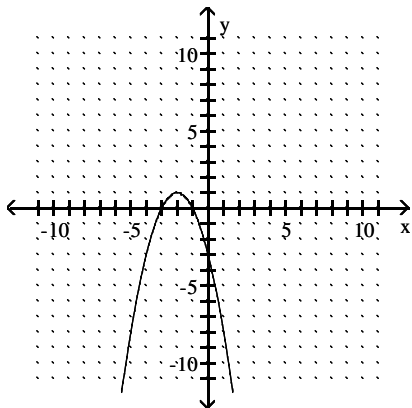
56)



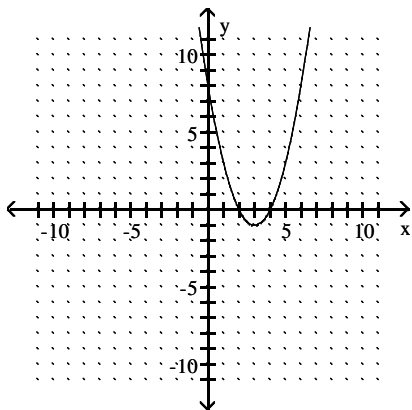
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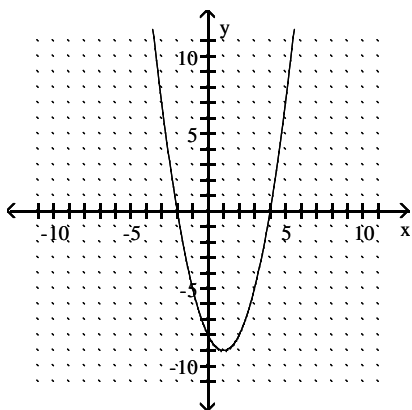
57)



58)



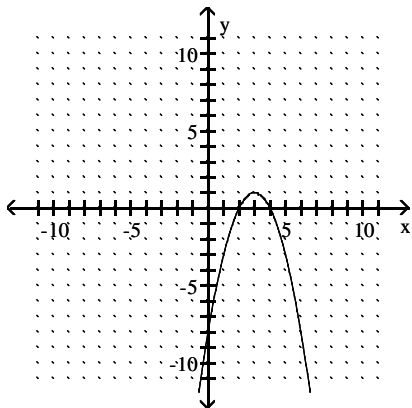
59)



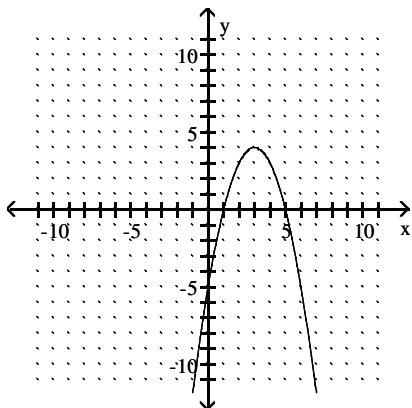
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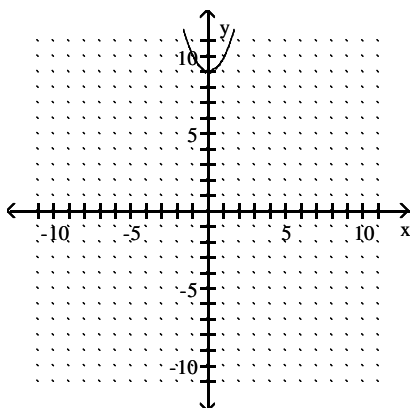
60)



61)



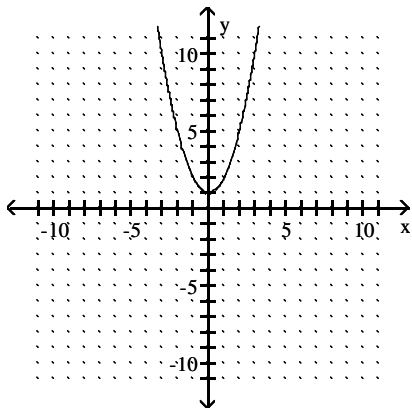
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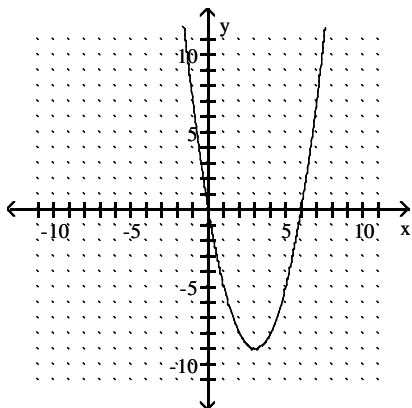
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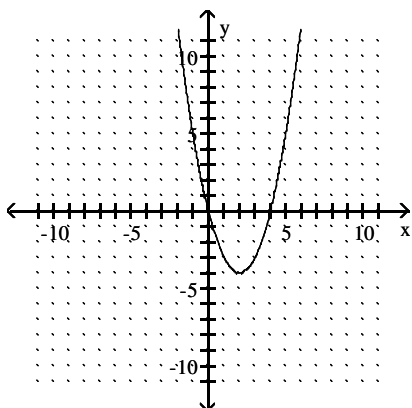
63)



64)



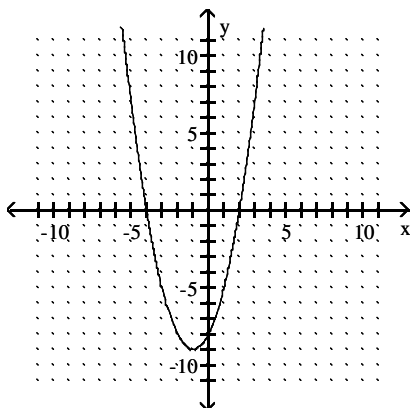
65)



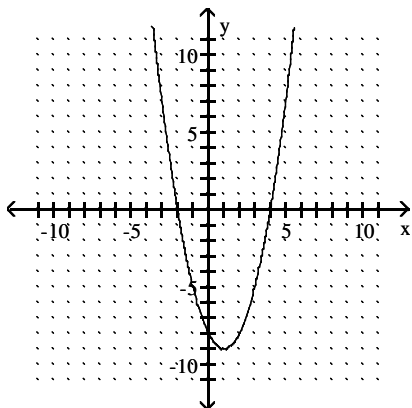
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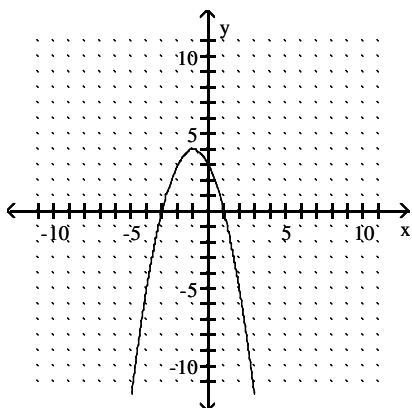
66)



67)



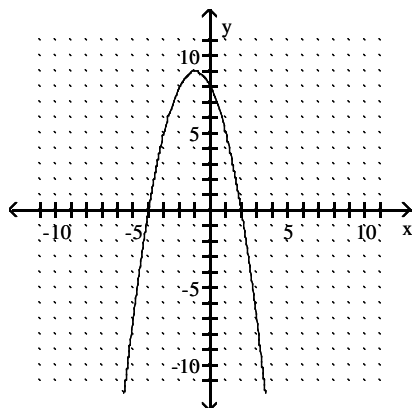
68)



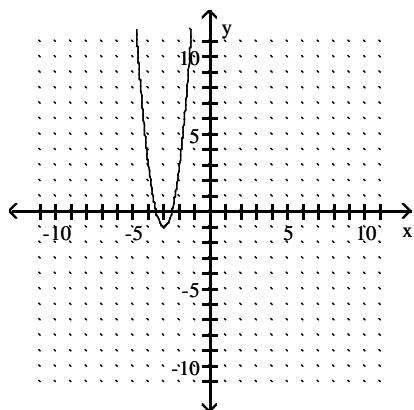
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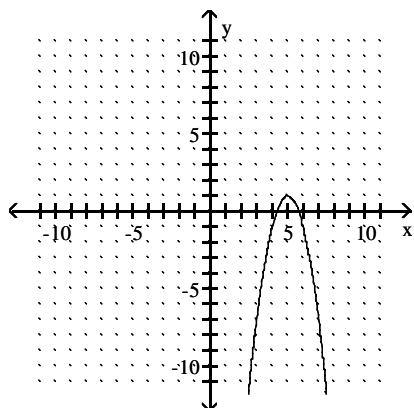
69)



70)



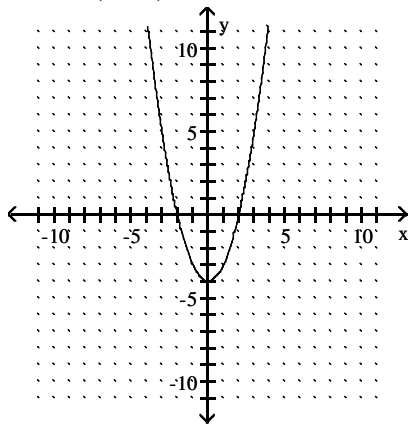
71)



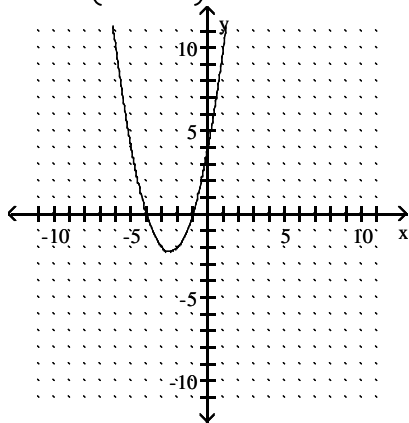
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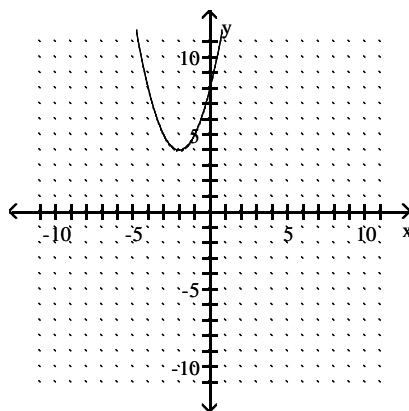
72) vertex: $(0, -4)$



73) vertex: $\left(-\frac{5}{2}, -\frac{9}{4}\right)$



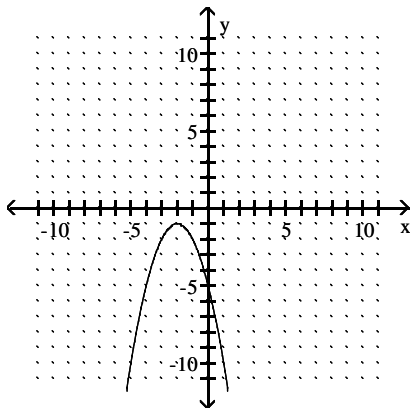
74) vertex: $(-2, 4)$



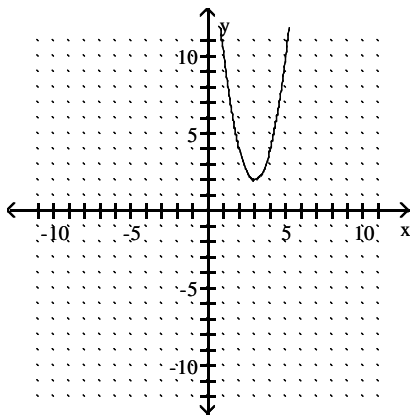
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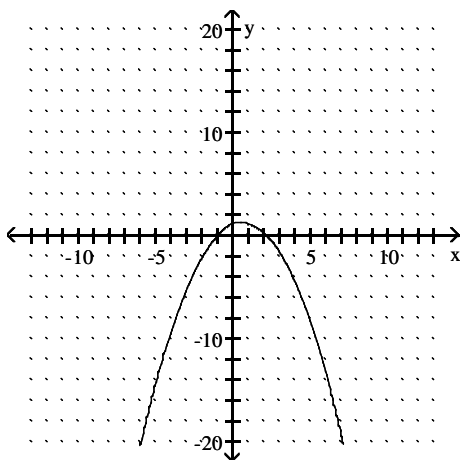
75) vertex: $(-2, -1)$



76) vertex: $(3, 2)$



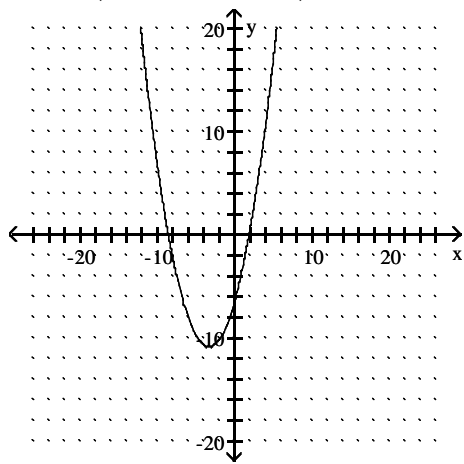
77) vertex: $(0.6, 1.28)$



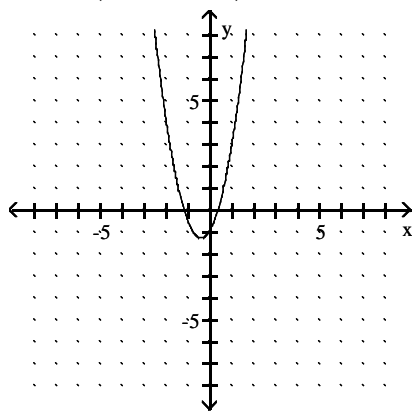
Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

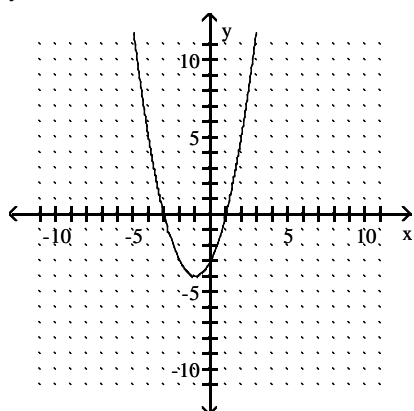
78) vertex: $(-3.375, -10.85625)$



79) vertex: $(-0.44, -1.26)$



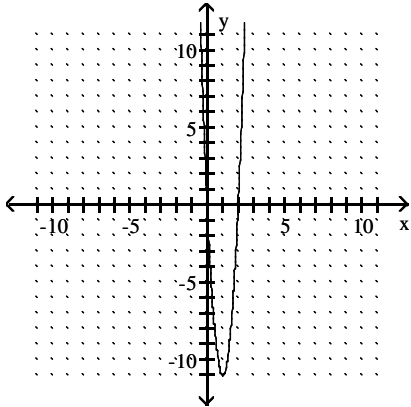
80) vertex $(-1, -4)$;
x-int: $(-3, 0)$ and $(1, 0)$;
y-int: $(0, -3)$



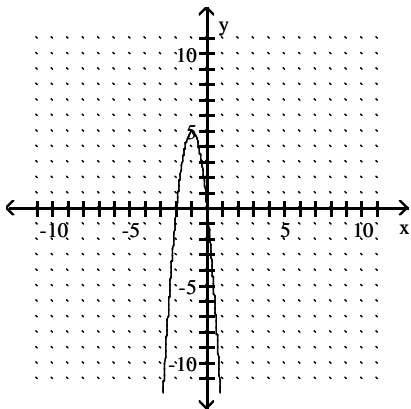
Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

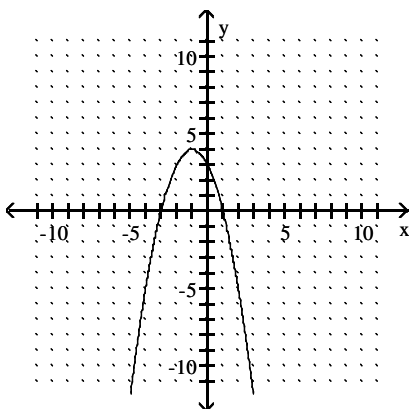
- 81) vertex $(1, -11)$;
x-int: $(0, 0)$ and $(2, 0)$;
y-int: $(0, 0)$



- 82) vertex $(-1, 5)$;
x-int: $(0, 0)$ and $(-2, 0)$;
y-int: $(0, 0)$



- 83) vertex $(-1, 4)$;
x-int: $(-3, 0)$ and $(1, 0)$;
y-int: $(0, 3)$



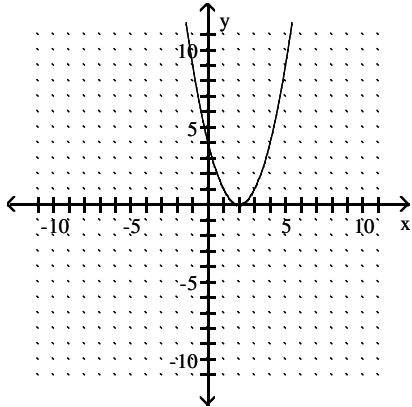
Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

84) vertex (2, 0)

x-int: (2, 0);

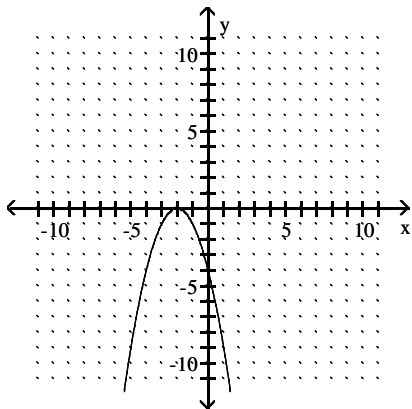
y-int: (0, 4)



85) vertex (-2, 0)

x-int: (-2, 0);

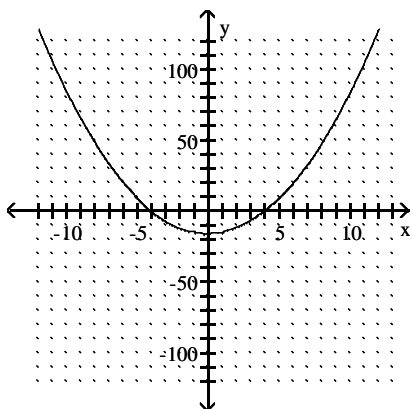
y-int: (0, -4)



86) vertex (0, -16)

x-int: (-4, 0) and (4, 0)

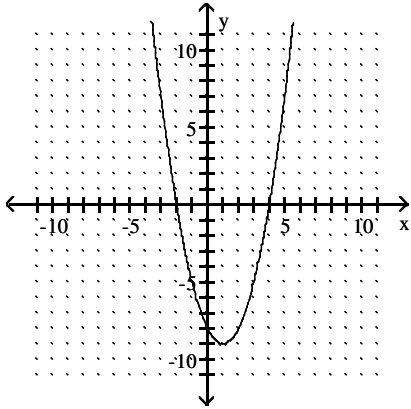
y-int: (0, -16)



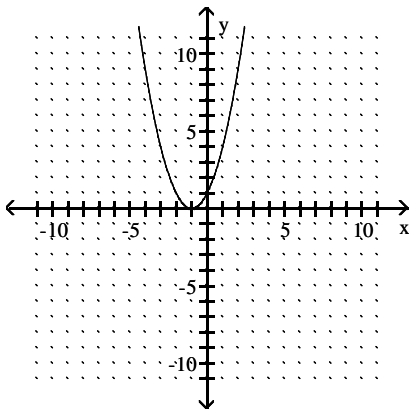
Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

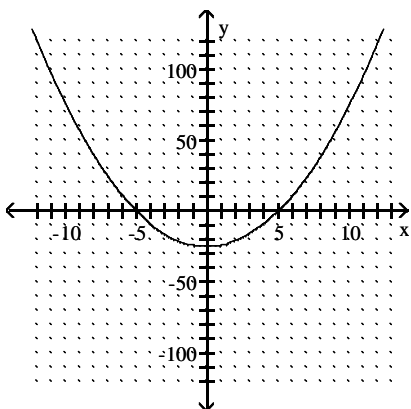
- 87) vertex $(1, -9)$;
x-int: $(-2, 0)$ and $(4, 0)$;
y-int: $(0, -8)$



- 88) vertex $(-1, 0)$
x-int: $(-1, 0)$;
y-int: $(0, 1)$



- 89) vertex $(0, -25)$
x-int: $(-5, 0)$ and $(5, 0)$
y-int: $(0, -25)$



Answer Key

Testname: WORKSHEET7.5A_GRAPHINGQUADRATICFUNCTIONS_V02

- 90) vertex $(-1, 6)$;
x-int: $(0, 0)$ and $(-2, 0)$;
y-int: $(0, 0)$

