

Name \_\_\_\_\_

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

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

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

3)  $y = -x^2 + 2x - 6$

4)  $y = -x^2 + 2x - 9$

5)  $y = 4x^2 + 3x - 9$

6)  $y = 2x^2 - 2x - 9$

7)  $y = -3x^2 - 3x - 9$

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

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

10)  $y = x^2 - 4$

11)  $y = x^2 + 16x$

12)  $y = x^2 + 13x$

13)  $y = -x^2 + 7x - 12$

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

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

16)  $y = 2x^2 + 3x - 35$

$$17) y = 2x^2 - 16x + 14$$

$$18) y = 2x^2 + 4x - 30$$

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

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

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

$$22) y = -x^2 + 5x - 6$$

$$23) y = 2x^2 - 6x - 8$$

$$24) y = x^2 + 17x$$

$$25) y = 2x^2 - 18x + 28$$

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

**Find the vertex for the parabola whose equation is given.**

$$27) y = x^2 + 1$$

$$28) y = x^2 + 8$$

$$29) y = x^2 - 12x + 2$$

$$30) y = x^2 + 10x - 7$$

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

$$32) y = -x^2 - 12x + 9$$

$$33) y = 6x^2 + 12x + 1$$

$$34) y = 4x^2 + 8x - 7$$

$$35) y = x^2 - 9x + 7$$

$$36) y = x^2 + 9x + 3$$

$$45) y = 3(x + 3)^2 - 5$$

$$37) y = -x^2 + 7x - 7$$

$$46) y = -4(x - 2)^2 - 6$$

$$38) y = -x^2 + 5x + 7$$

$$47) y = -(x + 1)^2 + 9$$

$$39) y = -3x^2 + 12x - 8$$

$$48) y = -(x + 1)^2 + 4$$

$$40) y = 3x^2 + 18x + 5$$

$$49) y = x^2 + 2x + 3$$

$$41) y = x^2 - 8x$$

$$50) y = -2x^2 + 4x + 4$$

$$42) y = x^2 - 3x$$

$$51) y = -x^2 + 5x + 4$$

$$43) y = (x - 6)^2 + 1$$

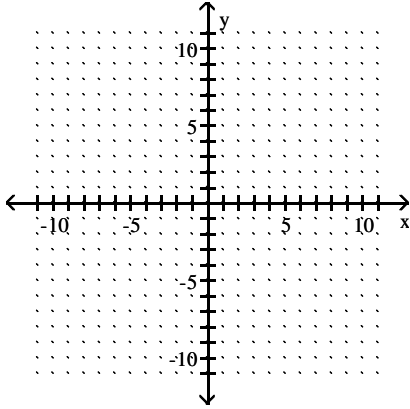
$$52) y = -2x^2 - 8x + 2$$

$$44) y = (x + 1)^2 + 3$$

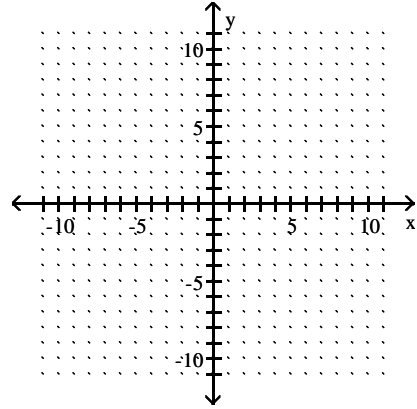
$$53) y = (x + 5)^2 + 6$$

Graph the parabola whose equation is given.

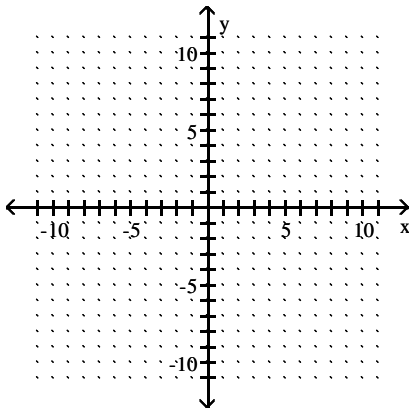
54)  $y = x^2 + 6x + 5$



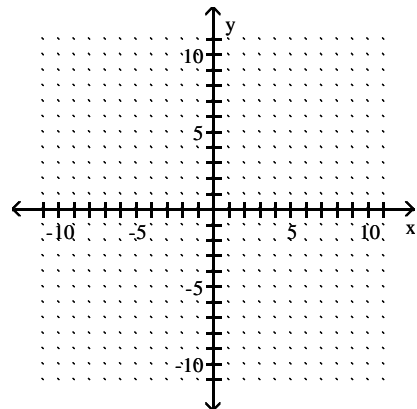
57)  $y = -x^2 - 6x - 8$



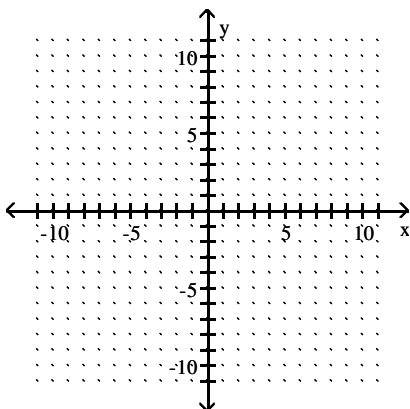
55)  $y = x^2 + 8x + 7$



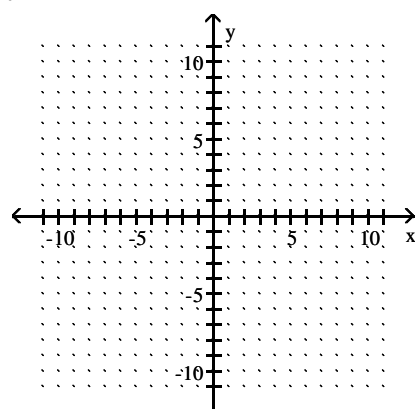
58)  $y = x^2 - 2x - 8$



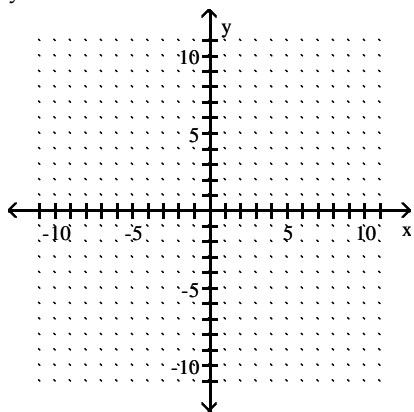
56)  $y = -x^2 - 4x - 3$



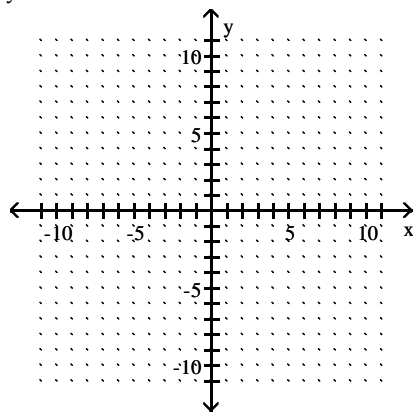
59)  $y = x^2 - 6x + 5$



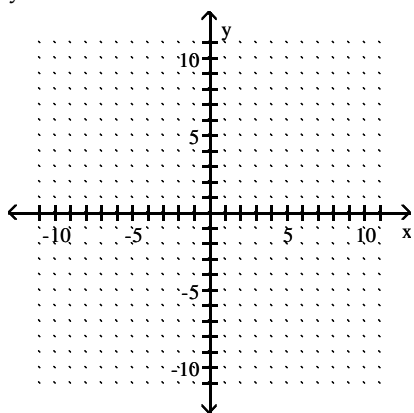
60)  $y = -x^2 + 4x + 5$



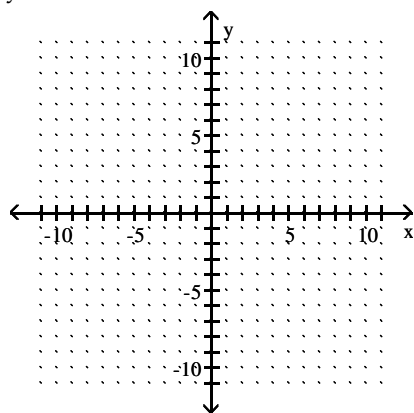
63)  $y = x^2 + 4$



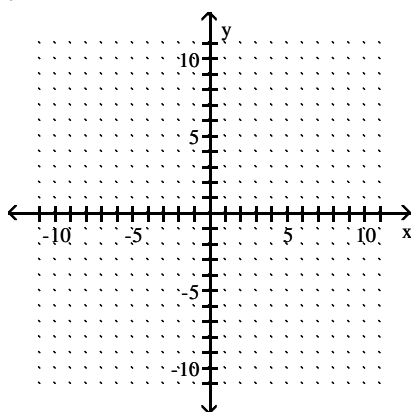
61)  $y = -x^2 + 4x - 3$



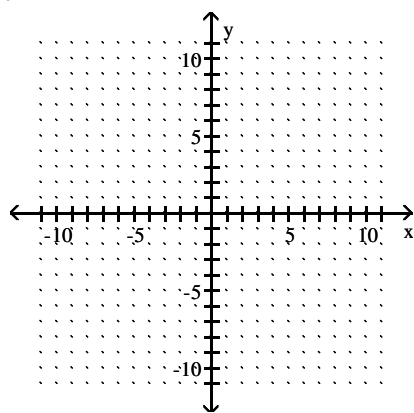
64)  $y = x^2 + 2x$



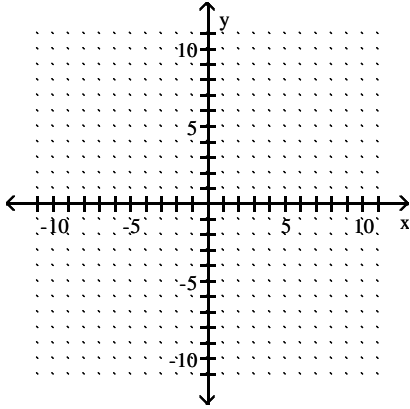
62)  $y = x^2 + 1$



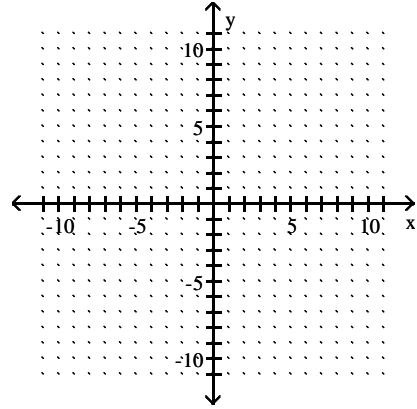
65)  $y = x^2 + 4x$



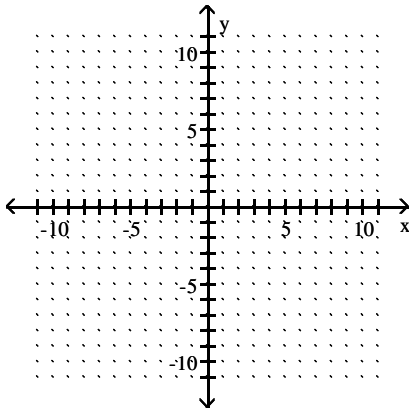
66)  $y = x^2 + 2x - 3$



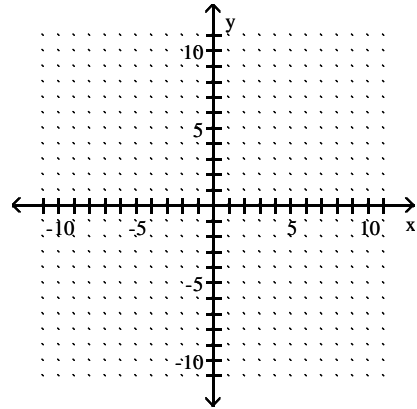
69)  $y = -x^2 + 2x + 8$



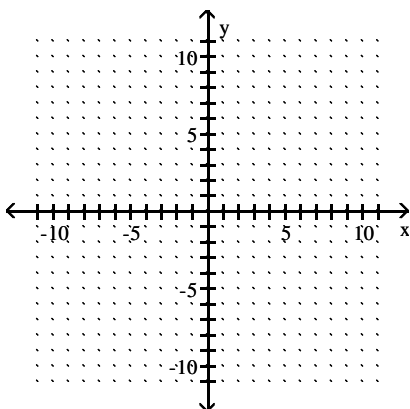
67)  $y = x^2 - 2x - 3$



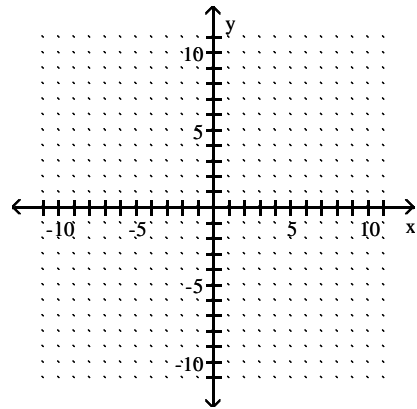
70)  $y = 2x^2 - 12x + 20$



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

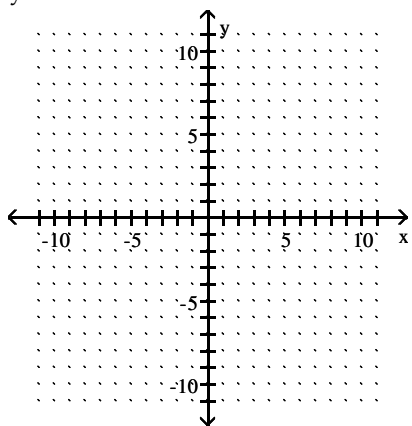


71)  $y = 4x^2 + 16x + 21$

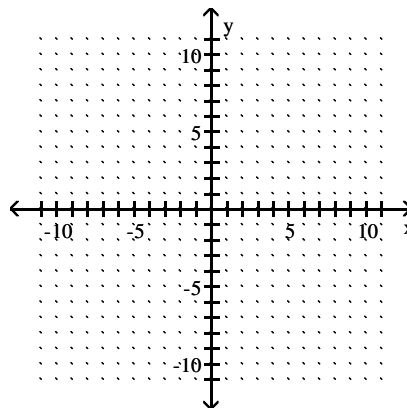


Sketch by hand the graph of the function. Give the coordinates for the vertex.

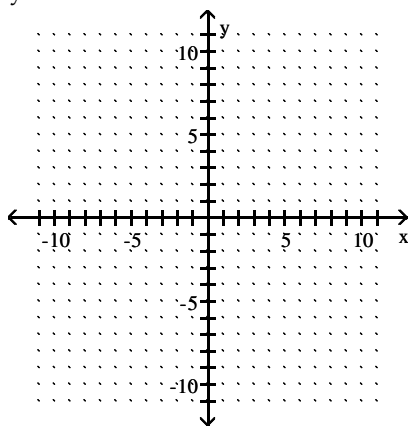
72)  $y = x^2 - 1$



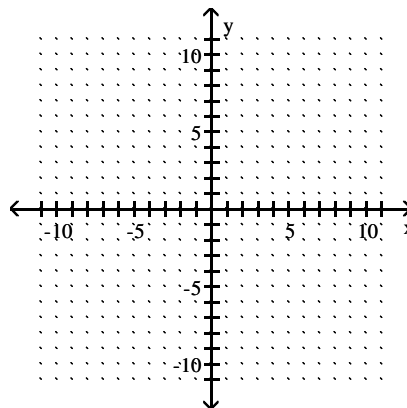
74)  $y = x^2 - 4x + 8$



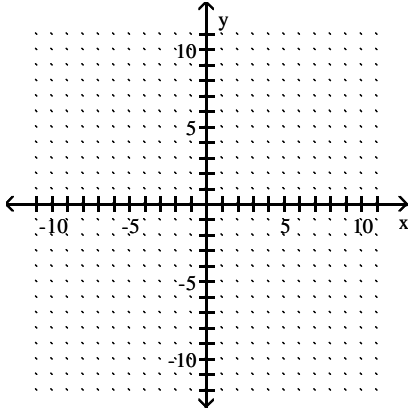
73)  $y = x^2 + 3x + 2$



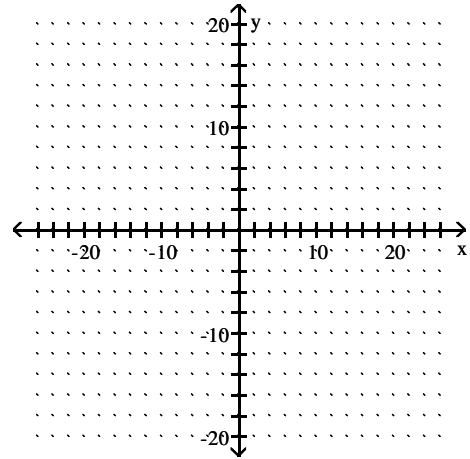
75)  $y = -x^2 - 2x - 5$



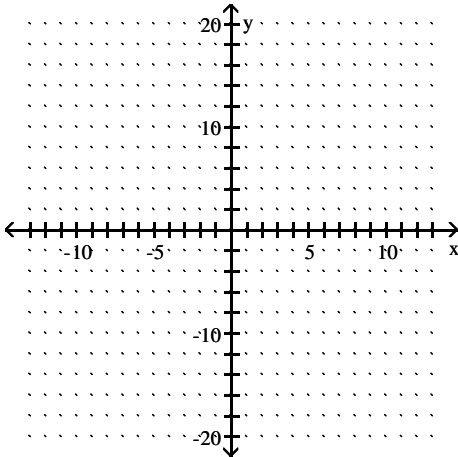
76)  $y = -4x^2 - 8x - 7$



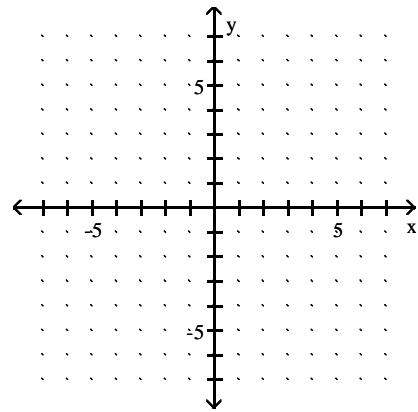
78)  $y = 0.1x^2 + 0.3x - 7.5$



77)  $y = -0.1x^2 + 0.4x - 1.7$



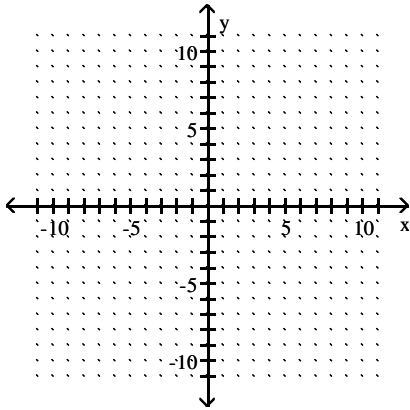
79)  $3.9y - 5.7x = 8.9x^2 - 1.6$



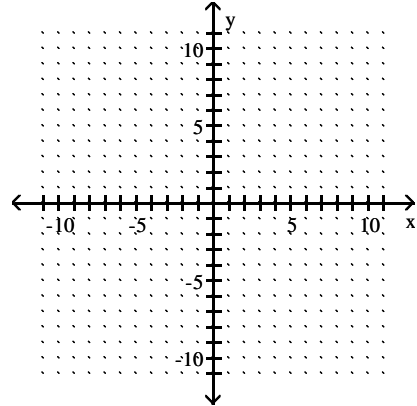


Find the vertex, the y-intercept, and the x-intercepts (if any exist), and graph the function.

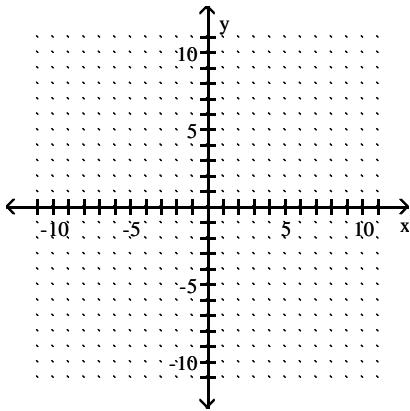
80)  $y = x^2 - 2x - 3$



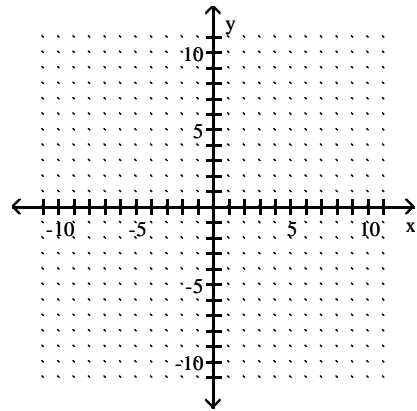
83)  $y = -x^2 - 2x + 8$



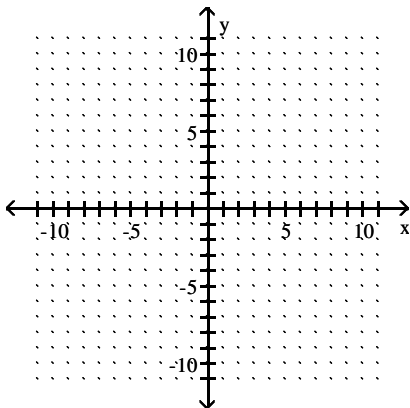
81)  $y = 10x^2 - 20x$



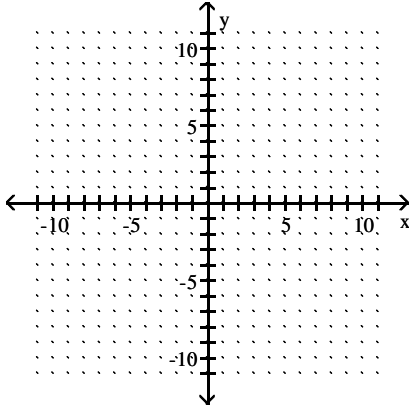
84)  $y = x^2 + 2x + 1$



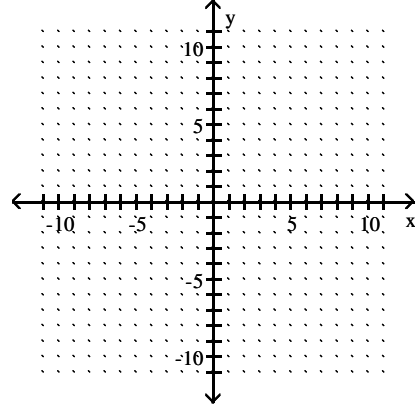
82)  $y = -7x^2 - 14x$



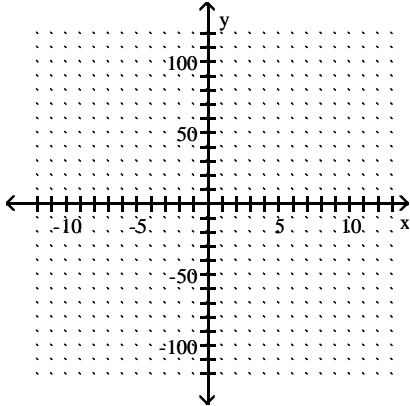
85)  $y = -x^2 + 4x - 4$



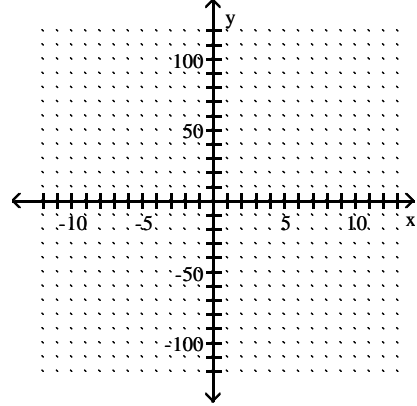
88)  $y = x^2 + 6x + 9$



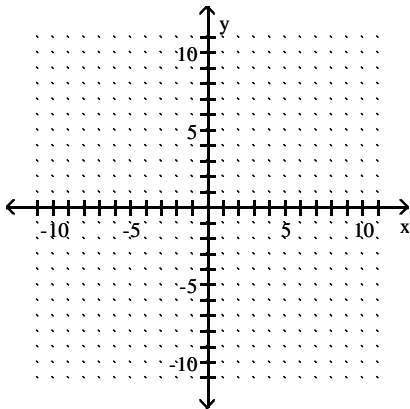
86)  $y = x^2 - 100$



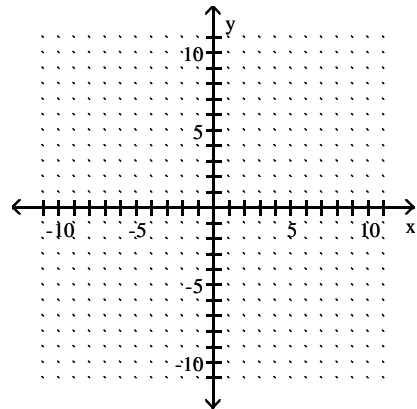
89)  $y = x^2 - 36$



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



90)  $y = -10x^2 - 20x$



## Answer Key

Testname: WORKSHEET7.5A\_GRAPHINGQUADRATICFUNCTIONS\_V01

- 1) Upward
- 2) Upward
- 3) Downward
- 4) Downward
- 5) Upward
- 6) Upward
- 7) Downward
- 8) Downward
- 9) x-intercepts: 2.2 and -2.2; y-intercept: -5
- 10) x-intercepts: 2 and -2; y-intercept: -4
- 11) x-intercepts: 0 and -16; y-intercept: 0
- 12) x-intercepts: 0 and -13; y-intercept: 0
- 13) x-intercepts: 3 and 4; y-intercept: -12
- 14) x-intercepts: 4 and 5; y-intercept: -20
- 15) x-intercepts: -4 and 0.5; y-intercept: -4
- 16) x-intercepts: -5 and 3.5; y-intercept: -35
- 17) x-intercepts: 1 and 7; y-intercept: 14
- 18) x-intercepts: 3 and -5; y-intercept: -30
- 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: 1.4 and -1.4; y-intercept: -2
- 22) x-intercepts: 2 and 3; y-intercept: -6
- 23) x-intercepts: 4 and -1; y-intercept: -8
- 24) x-intercepts: 0 and -17; y-intercept: 0
- 25) x-intercepts: 7 and 2; y-intercept: 28
- 26) x-intercepts: 1.3 and -5.3; y-intercept: -7
- 27) (0, 1)
- 28) (0, 8)
- 29) (6, -34)
- 30) (-5, -32)
- 31) (-5, 23)
- 32) (-6, 45)
- 33) (-1, -5)
- 34) (-1, -11)
- 35)  $\left(\frac{9}{2}, -\frac{53}{4}\right)$
- 36)  $\left(-\frac{9}{2}, -\frac{69}{4}\right)$
- 37)  $\left(\frac{7}{2}, \frac{21}{4}\right)$
- 38)  $\left(\frac{5}{2}, \frac{53}{4}\right)$
- 39) (2, 4)
- 40) (-3, -22)
- 41) (4, -16)
- 42)  $\left(\frac{3}{2}, -\frac{9}{4}\right)$
- 43) (6, 1)
- 44) (-1, 3)

Answer Key

Testname: WORKSHEET7.5A\_GRAPHINGQUADRATICFUNCTIONS\_V01

45) (-3, -5)

46) (2, -6)

47) (-1, 9)

48) (-1, 4)

49) (-1, 2)

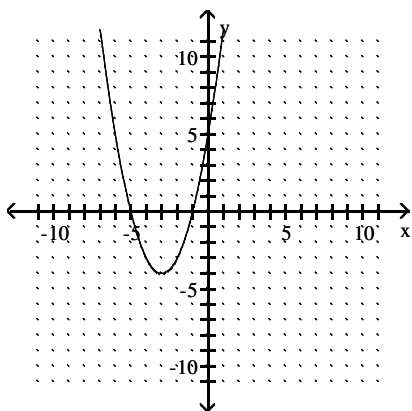
50) (1, 6)

51)  $\left(\frac{5}{2}, \frac{41}{4}\right)$

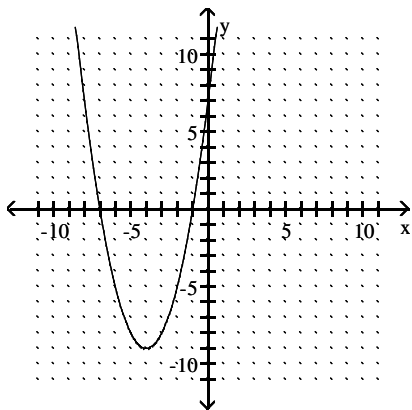
52) (-2, 10)

53) (-5, 6)

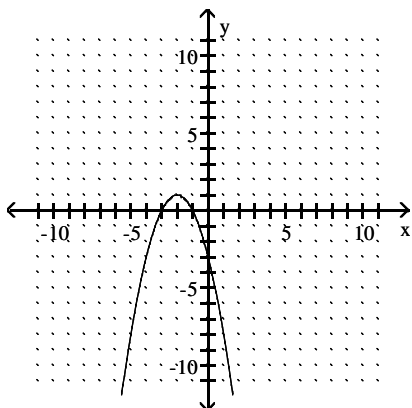
54)



55)



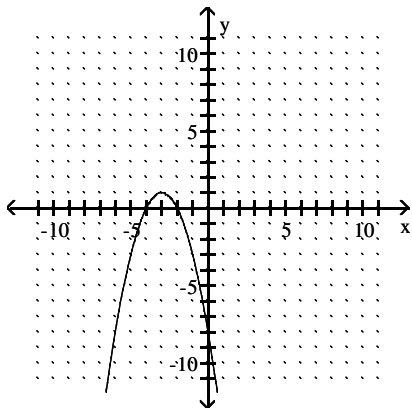
56)



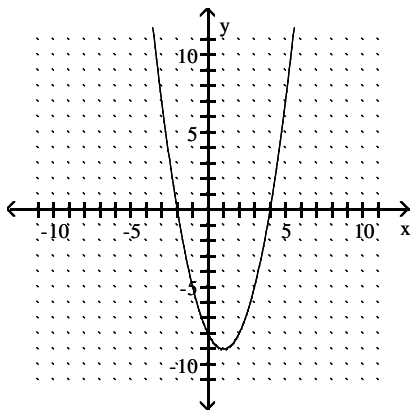
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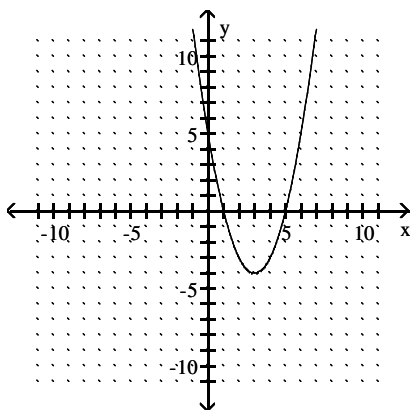
57)



58)



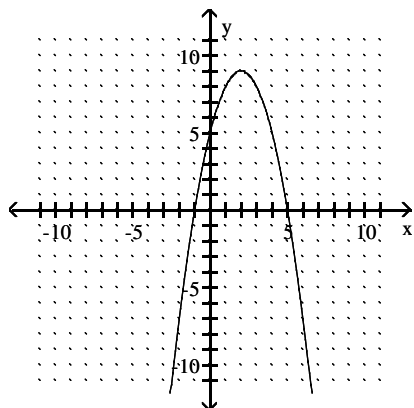
59)



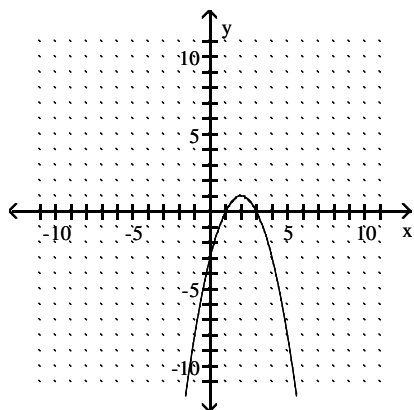
Answer Key

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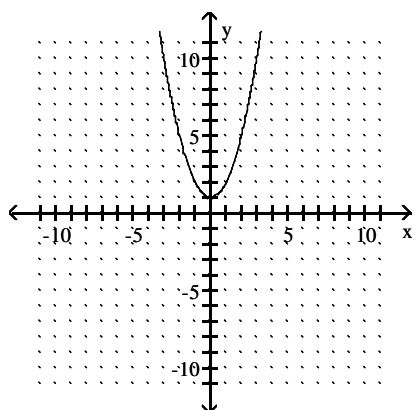
60)



61)



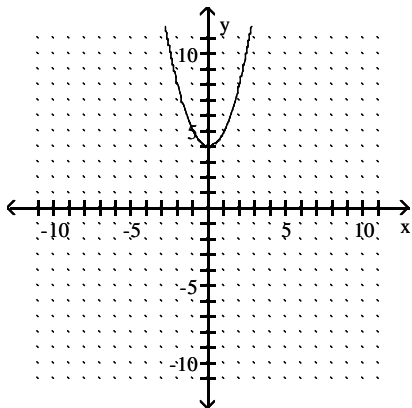
62)



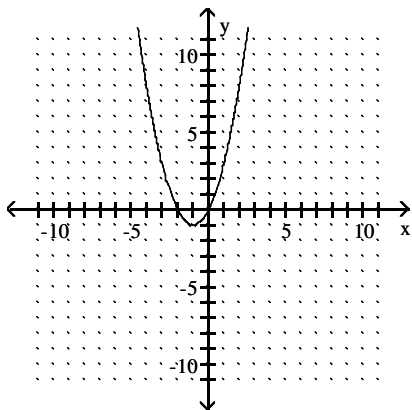
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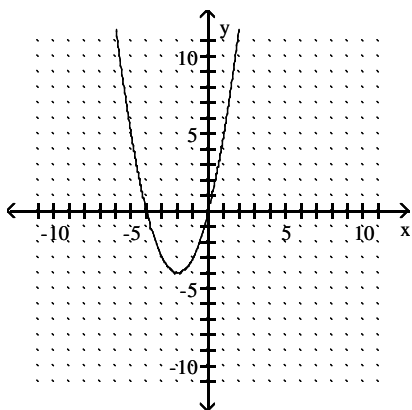
63)



64)



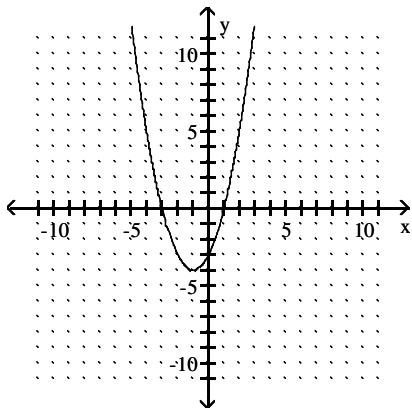
65)



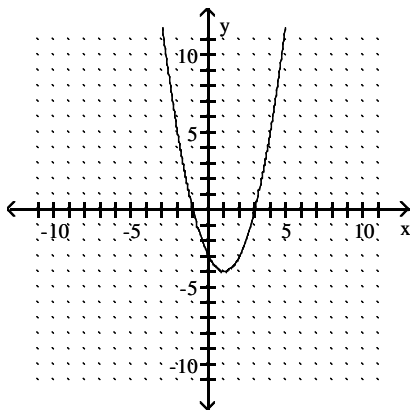
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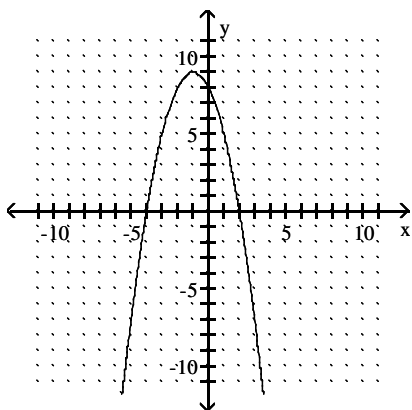
66)



67)



68)

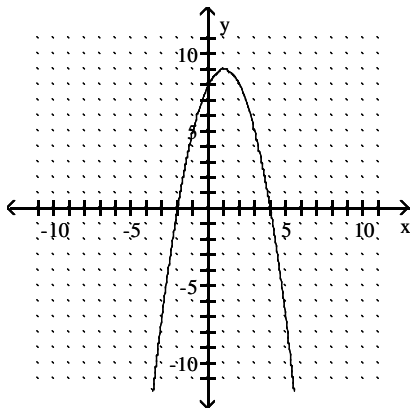




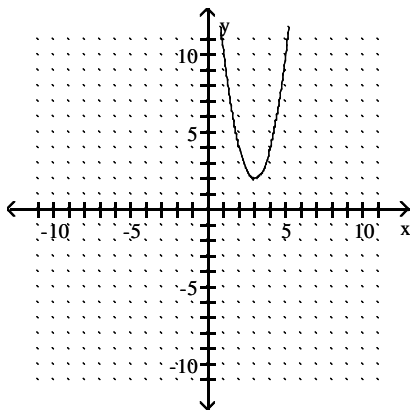
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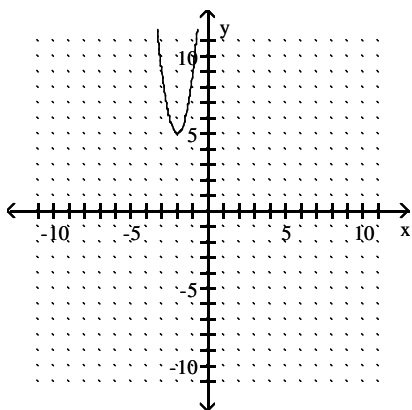
69)



70)



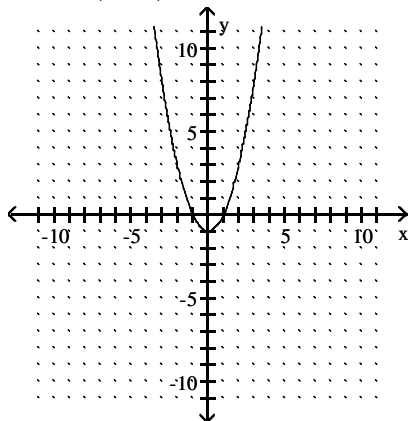
71)



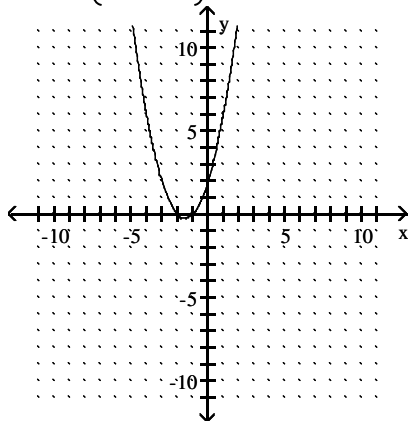
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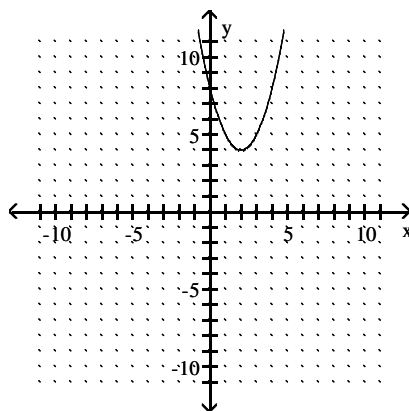
72) vertex: (0, -1)



73) vertex:  $\left(-\frac{3}{2}, -\frac{1}{4}\right)$



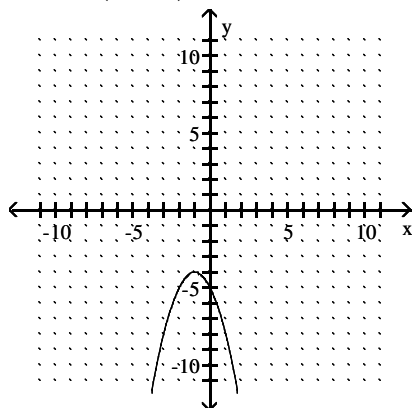
74) vertex: (2, 4)



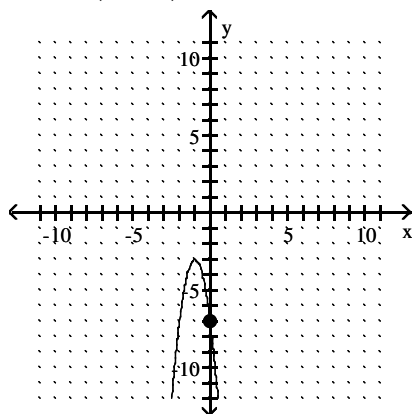
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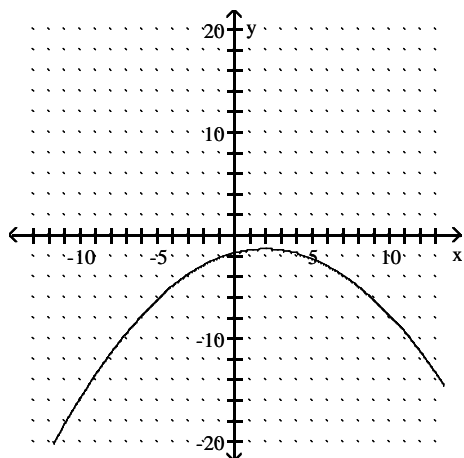
75) vertex:  $(-1, -4)$



76) vertex:  $(-1, -3)$



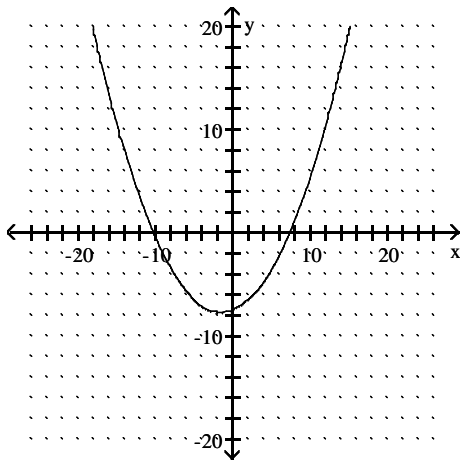
77) vertex:  $(2, -1.3)$



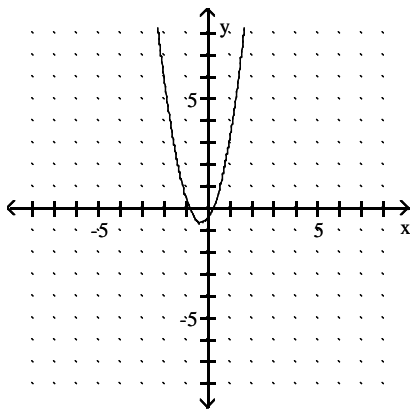
# Answer Key

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78) vertex:  $(-1.5, -7.725)$



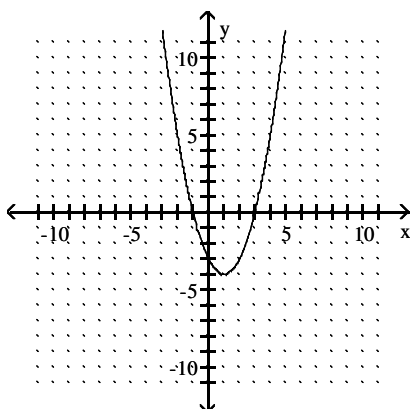
79) vertex:  $(-0.32, -0.64)$



80) vertex  $(1, -4)$ ;

x-int:  $(-1, 0)$  and  $(3, 0)$ ;

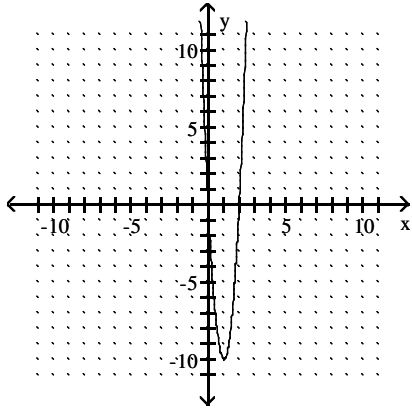
y-int:  $(0, -3)$



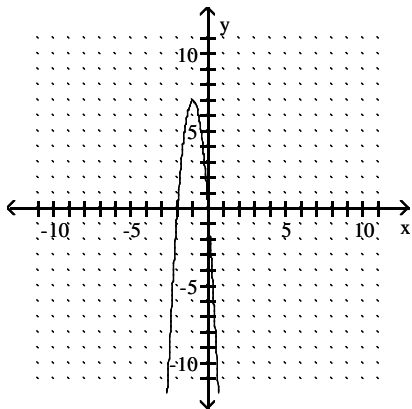
Answer Key

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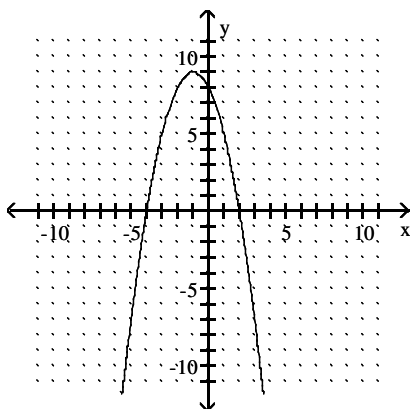
- 81) vertex  $(1, -10)$ ;  
x-int:  $(0, 0)$  and  $(2, 0)$ ;  
y-int:  $(0, 0)$



- 82) vertex  $(-1, 7)$ ;  
x-int:  $(0, 0)$  and  $(-2, 0)$ ;  
y-int:  $(0, 0)$



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



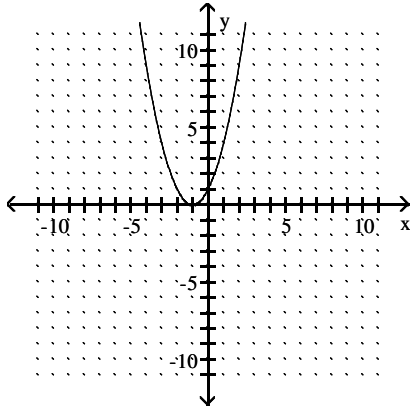
Answer Key

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84) vertex  $(-1, 0)$

x-int:  $(-1, 0)$ ;

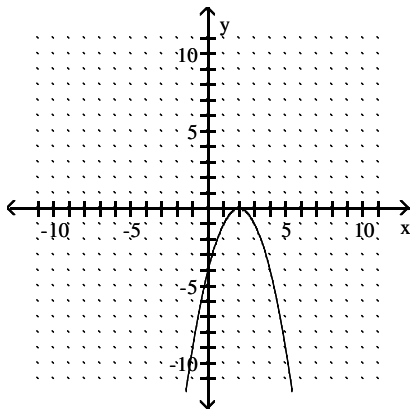
y-int:  $(0, 1)$



85) vertex  $(2, 0)$

x-int:  $(2, 0)$ ;

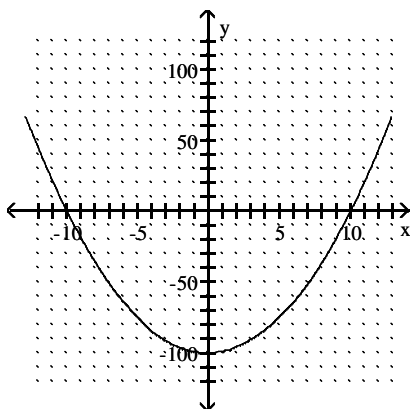
y-int:  $(0, -4)$



86) vertex  $(0, -100)$

x-int:  $(-10, 0)$  and  $(10, 0)$

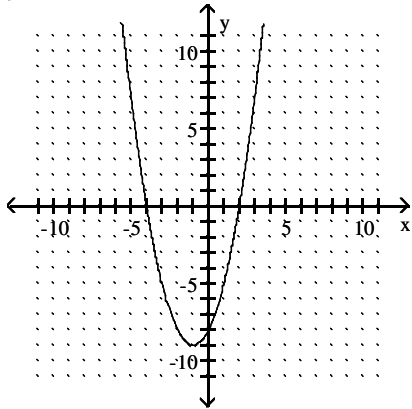
y-int:  $(0, -100)$



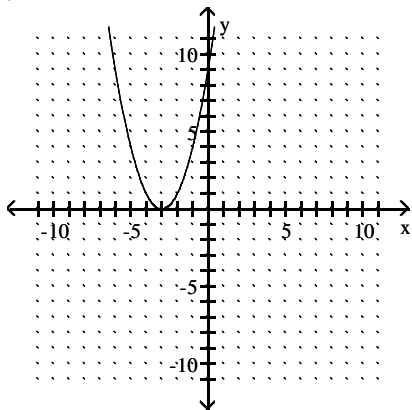
Answer Key

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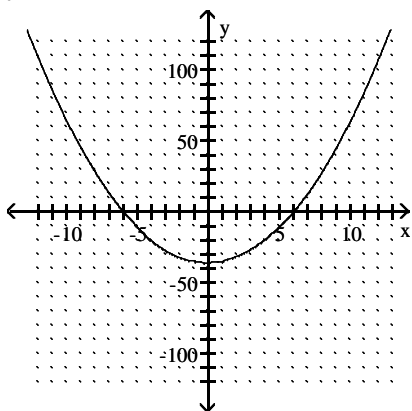
- 87) vertex  $(-1, -9)$ ;  
x-int:  $(-4, 0)$  and  $(2, 0)$ ;  
y-int:  $(0, -8)$



- 88) vertex  $(-3, 0)$   
x-int:  $(-3, 0)$ ;  
y-int:  $(0, 9)$



- 89) vertex  $(0, -36)$   
x-int:  $(-6, 0)$  and  $(6, 0)$   
y-int:  $(0, -36)$



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- 90) vertex  $(-1, 10)$ ;  
x-int:  $(0, 0)$  and  $(-2, 0)$ ;  
y-int:  $(0, 0)$

