

Ch. 9-1 & 9-2 Graphing Quadratic Functions/Relations Date _____ Period _____

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Identify the vertex, axis of symmetry, y-intercept, and x-intercepts of each. Then sketch the graph. Tip: these quadratics are all functions.

1) $f(x) = -\frac{1}{4}x^2 + \frac{1}{4}x + 3$

2) $f(x) = -x^2 + 10x - 26$

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

4) $f(x) = x^2 + 4x + 6$

5) $f(x) = -2x^2 + 12x - 19$

6) $f(x) = -\frac{1}{4}x^2 - \frac{5}{4}x + \frac{3}{2}$

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

8) $f(x) = -2x^2 - 8x - 9$

9) $f(x) = 2x^2 - 10x + 8$

10) $f(x) = -x^2 + 12x - 37$

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

12) $f(x) = -x^2 - 6x - 8$

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

14) $f(x) = \frac{1}{2}\left(x - \frac{5}{2}\right)^2 - \frac{25}{8}$

15) $f(x) = (x + 4)^2 + 1$

16) $f(x) = -\frac{1}{4}\left(x - \frac{7}{2}\right)^2 + \frac{49}{16}$

17) $f(x) = \left(x + \frac{5}{2}\right)^2 - \frac{9}{4}$

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

Identify the vertex, axis of symmetry, y-intercept, and x-intercepts of each. Then sketch the graph. Tip: these quadratics are NOT functions.

19) $x = -\frac{1}{3}y^2 - y + \frac{10}{3}$

20) $x = -2y^2 - 16y - 30$

21) $x = -y^2 + 10y - 26$

22) $x = -2y^2 + 8y - 9$

23) $x = y^2 - 6y + 11$

24) $x = -8y^2 + 72y - 160$

25) $x = -y^2 + 8y - 12$

26) $x = -5y^2 + 20y - 21$

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

28) $x = y^2 - 8y + 17$

29) $x = -2y^2 + 16y - 30$

30) $x = \frac{1}{3}y^2 - \frac{8}{3}y + 5$

31) $x = -\left(y + \frac{7}{2}\right)^2 + \frac{1}{4}$

32) $x = \frac{1}{4}(y + 1)^2 - \frac{9}{4}$

33) $x = -\left(y - \frac{5}{2}\right)^2 + \frac{9}{4}$

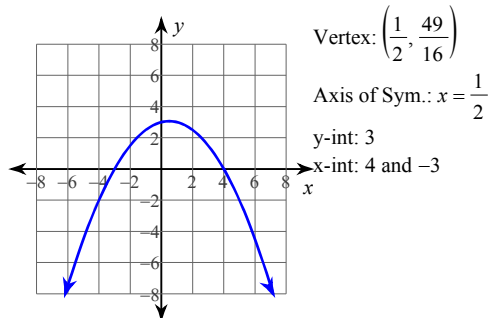
34) $x = \left(y + \frac{1}{2}\right)^2 - \frac{25}{4}$

35) $x = \left(y - \frac{9}{2}\right)^2 - \frac{9}{4}$

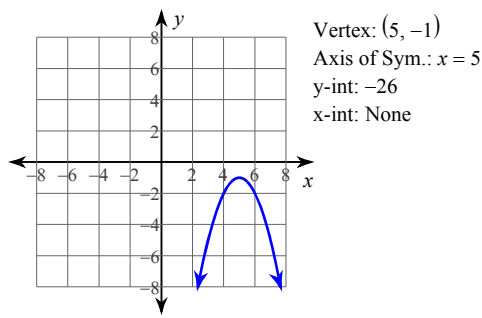
36) $x = 2(y + 1)^2 - 2$

Answers to Ch. 9-1 & 9-2 Graphing Quadratic Functions/Relations (ID: 1)

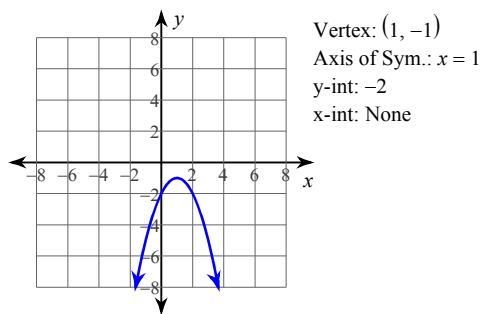
1)



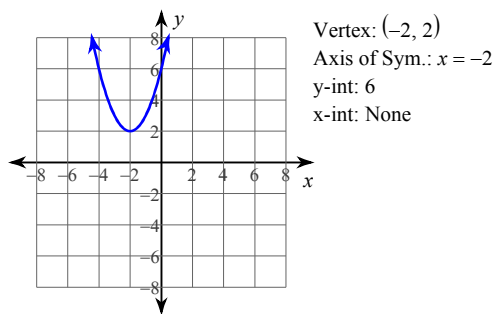
2)



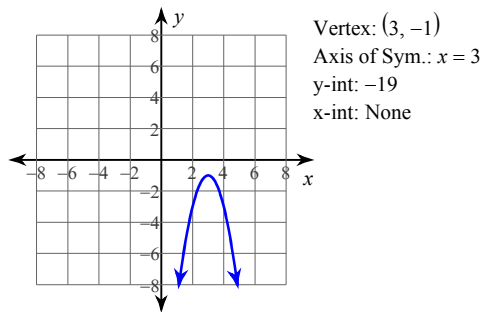
3)



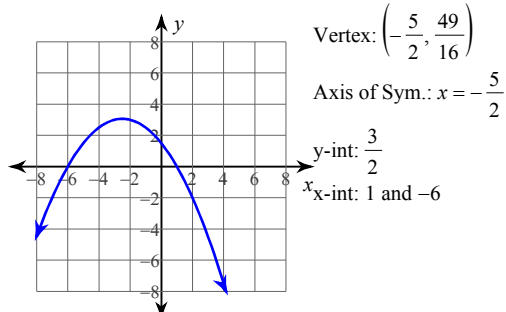
4)



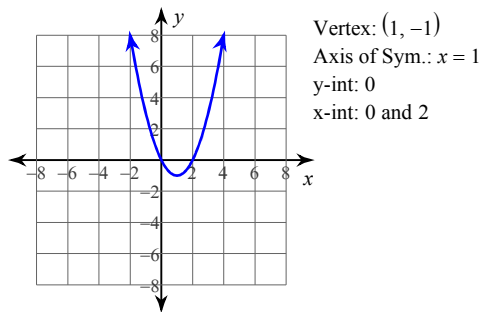
5)



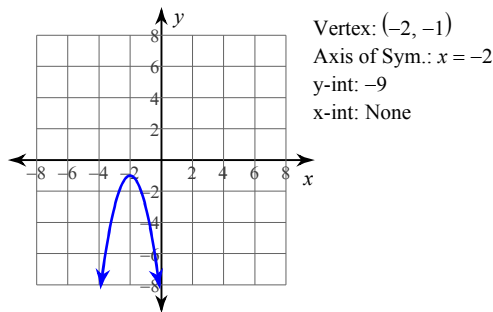
6)



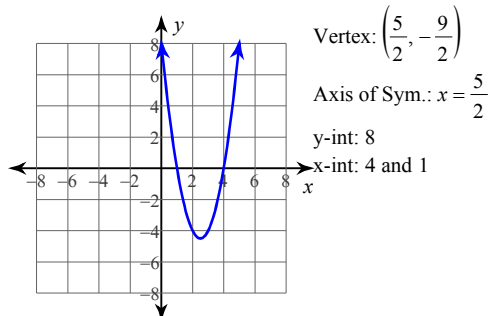
7)



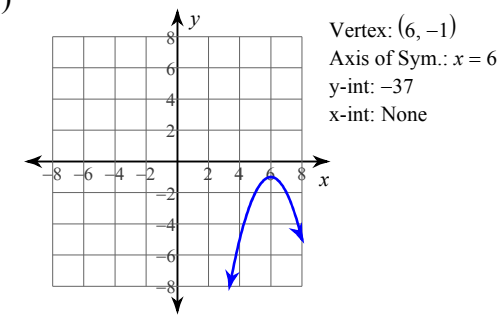
8)



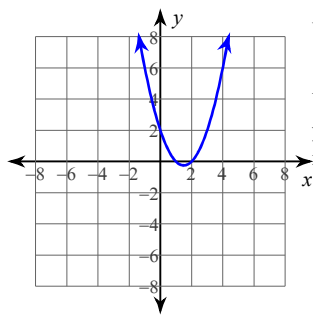
9)



10)

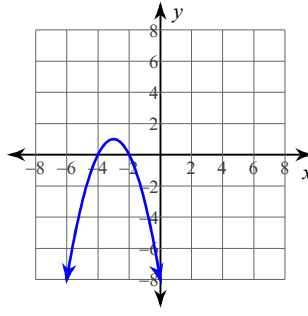


11)



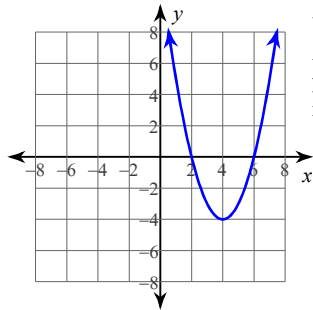
Vertex: $\left(\frac{3}{2}, -\frac{1}{4}\right)$
 Axis of Sym.: $x = \frac{3}{2}$
 y-int: 2
 x-int: 2 and 1

12)



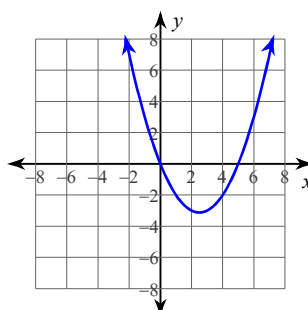
Vertex: $(-3, 1)$
 Axis of Sym.: $x = -3$
 y-int: -8
 x-int: -4 and -2

13)



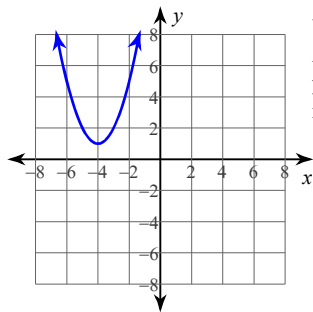
Vertex: $(4, -4)$
 Axis of Sym.: $x = 4$
 y-int: 12
 x-int: 6 and 2

14)



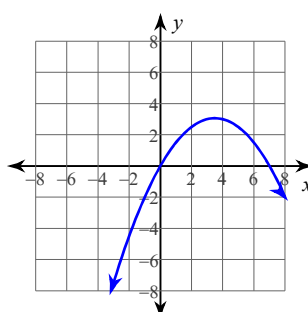
Vertex: $\left(\frac{5}{2}, -\frac{25}{8}\right)$
 Axis of Sym.: $x = \frac{5}{2}$
 y-int: 0
 x-int: 0 and 5

15)



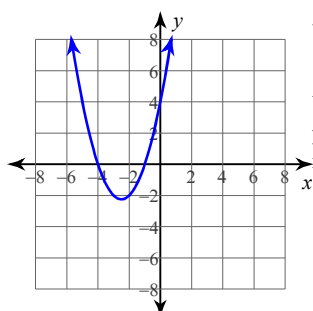
Vertex: $(-4, 1)$
 Axis of Sym.: $x = -4$
 y-int: 17
 x-int: None

16)



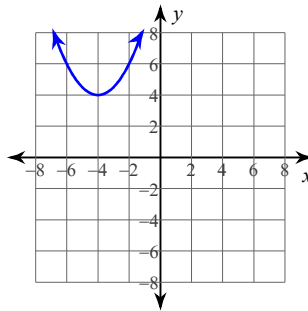
Vertex: $\left(\frac{7}{2}, \frac{49}{16}\right)$
 Axis of Sym.: $x = \frac{7}{2}$
 y-int: 0
 x-int: 0 and 7

17)



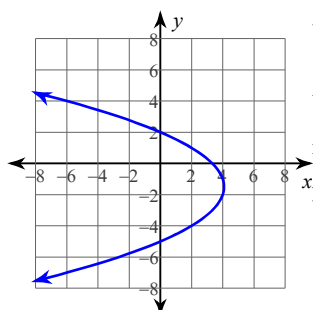
Vertex: $\left(-\frac{5}{2}, -\frac{9}{4}\right)$
 Axis of Sym.: $x = -\frac{5}{2}$
 y-int: 4
 x-int: -4 and -1

18)



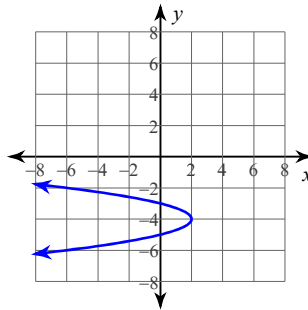
Vertex: $(-4, 4)$
 Axis of Sym.: $x = -4$
 y-int: 12
 x-int: None

19)



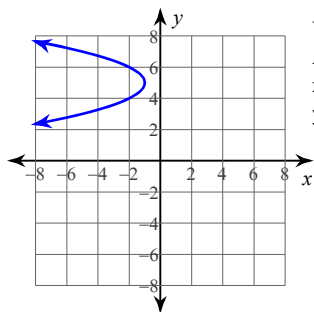
Vertex: $\left(\frac{49}{12}, -\frac{3}{2}\right)$
 Axis of Sym.: $y = -\frac{3}{2}$
 x-int: $\frac{10}{3}$
 y-int: 2 and -5

20)



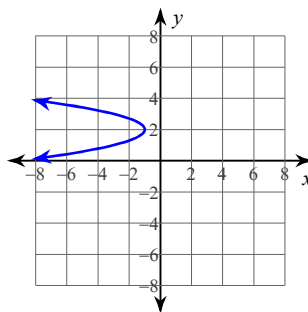
Vertex: $(2, -4)$
 Axis of Sym.: $y = -4$
 x-int: -30
 y-int: -5 and -3

21)



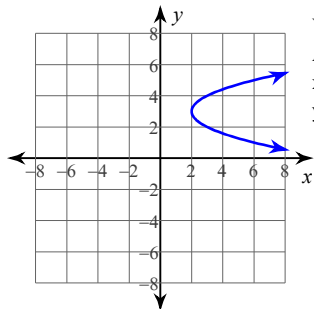
Vertex: $(-1, 5)$
 Axis of Sym.: $y = 5$
 x-int: -26
 y-int: None

22)



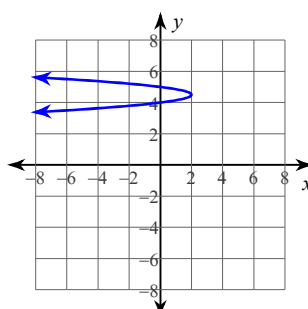
Vertex: $(-1, 2)$
 Axis of Sym.: $y = 2$
 x-int: -9
 y-int: None

23)



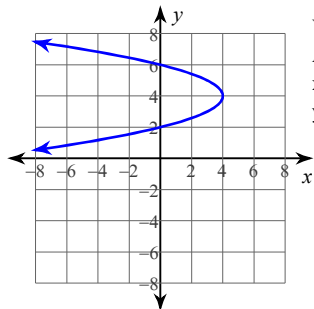
Vertex: $(2, 3)$
 Axis of Sym.: $y = 3$
 x-int: 11
 y-int: None

24)



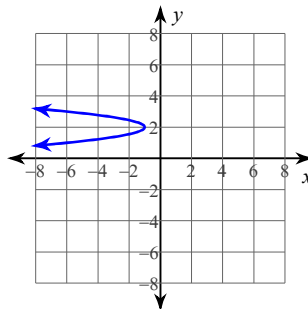
Vertex: $(2, \frac{9}{2})$
 Axis of Sym.: $y = \frac{9}{2}$
 x-int: -160
 y-int: 5 and 4

25)



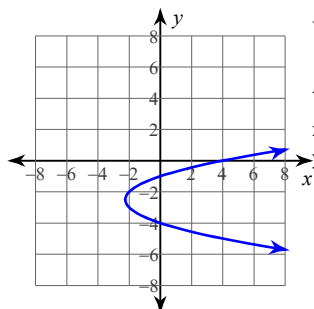
Vertex: $(4, 4)$
 Axis of Sym.: $y = 4$
 x-int: -12
 y-int: 6 and 2

26)



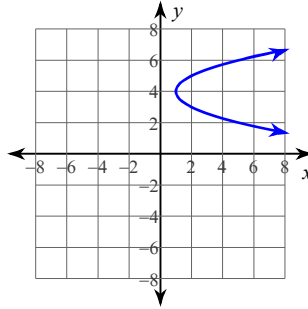
Vertex: $(-1, 2)$
 Axis of Sym.: $y = 2$
 x-int: -21
 y-int: None

27)



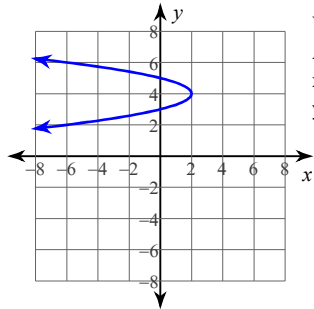
Vertex: $(-\frac{9}{4}, -\frac{5}{2})$
 Axis of Sym.: $y = -\frac{5}{2}$
 x-int: 4
 y-int: -4 and -1

28)



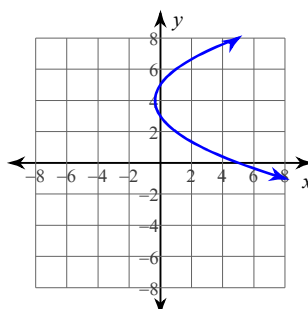
Vertex: $(1, 4)$
 Axis of Sym.: $y = 4$
 x-int: 17
 y-int: None

29)



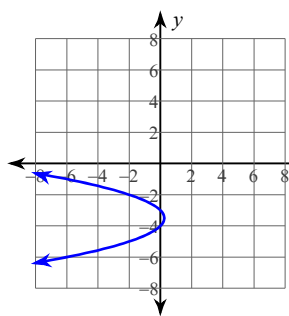
Vertex: $(2, 4)$
 Axis of Sym.: $y = 4$
 x-int: -30
 y-int: 5 and 3

30)



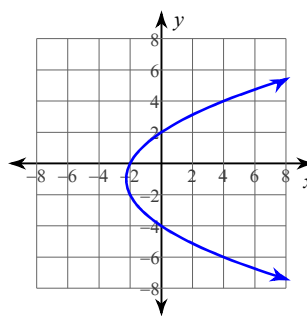
Vertex: $(-\frac{1}{3}, 4)$
 Axis of Sym.: $y = 4$
 x-int: 5
 y-int: 5 and 3

31)



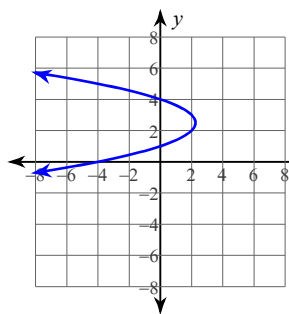
Vertex: $\left(\frac{1}{4}, -\frac{7}{2}\right)$
 Axis of Sym.: $y = -\frac{7}{2}$
 x-int: -12
 y-int: -4 and -3

32)



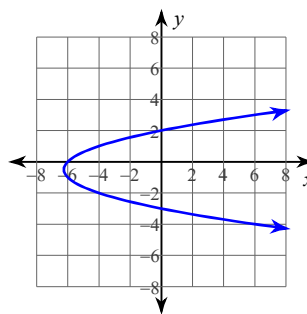
Vertex: $\left(-\frac{9}{4}, -1\right)$
 Axis of Sym.: $y = -1$
 x-int: -2
 y-int: 2 and -4

33)



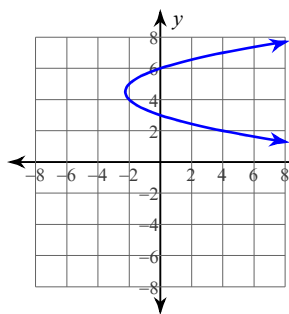
Vertex: $\left(\frac{9}{4}, \frac{5}{2}\right)$
 Axis of Sym.: $y = \frac{5}{2}$
 x-int: -4
 y-int: 4 and 1

34)



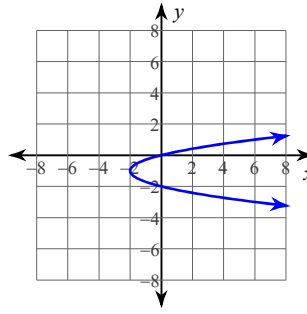
Vertex: $\left(-\frac{25}{4}, -\frac{1}{2}\right)$
 Axis of Sym.: $y = -\frac{1}{2}$
 x-int: -6
 y-int: 2 and -3

35)



Vertex: $\left(-\frac{9}{4}, \frac{9}{2}\right)$
 Axis of Sym.: $y = \frac{9}{2}$
 x-int: 18
 y-int: 6 and 3

36)



Vertex: $(-2, -1)$
 Axis of Sym.: $y = -1$
 x-int: 0
 y-int: 0 and -2