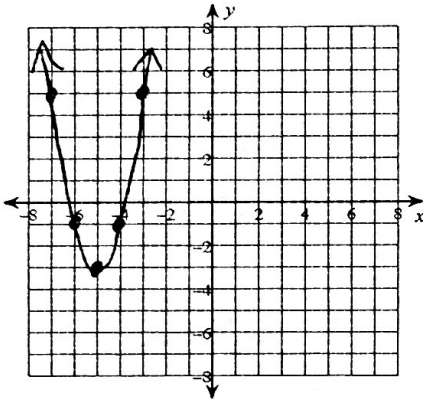


Unit 5 Graphing Quadratics Review

Graph the function and identify the key features. Approximate where necessary. Write intervals in both notations.

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



2) a. x-intercept(s): $(-6.2, 0), (-3.8, 0)$

b. y-intercept: $(0, 47)$

c. axis of symmetry: $x = -5$

d. vertex: $(-5, -3)$

e. Max/Min Value: -3

f. x-value that max/min the function: -5

g. Domain:

$(-\infty, \infty)$

h. Range:

$[-3, \infty)$

j. Increasing:

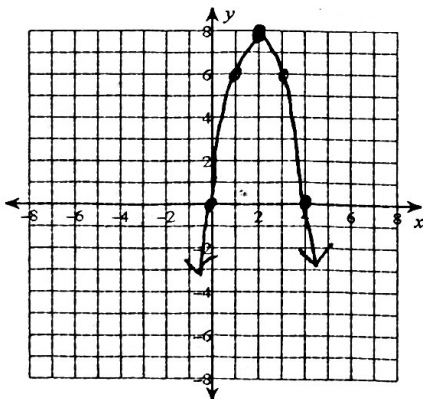
$(-5, \infty)$

k. Decreasing:

$(-\infty, -5)$

l. Direction of Opening: Up

3) $y = -2x(x - 4)$



4) a. x-intercept(s): $(0, 0), (4, 0)$

b. y-intercept: $(0, 0)$

c. axis of symmetry: $x = 2$

d. vertex: $(2, 8)$

e. Max/Min Value: 8

f. x-value that max/min the function: 2

g. Domain:

$(-\infty, \infty)$

h. Range:

$(-\infty, 8]$

j. Increasing:

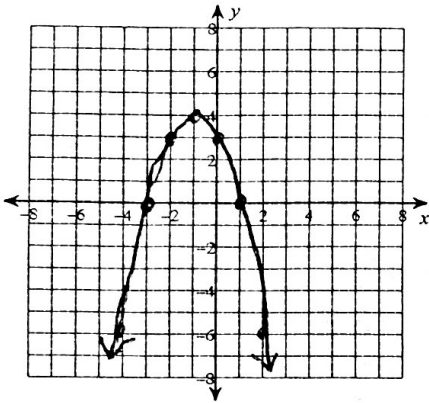
$(-\infty, 2)$

k. Decreasing:

$(2, \infty)$

l. Direction of Opening: Down

5) $y = -(x + 3)(x - 1)$



6) a. x-intercept(s): $(-3, 0), (1, 0)$

b. y-intercept: $(0, 3)$

c. axis of symmetry: $x = -1$

d. vertex: $(-1, 4)$

e. Max/Min Value: 4

f. x-value that max/min the function: -1

g. Domain:

h. Range:

$(-\infty, \infty)$

$(-\infty, 4]$

j. Increasing:

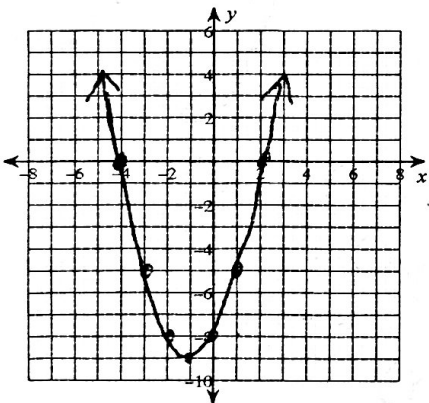
k. Decreasing:

$(-\infty, -1)$

$(-1, \infty)$

l. Direction of Opening: Down

7) $y = (x + 4)(x - 2)$



8) a. x-intercept(s): $(-4, 0), (2, 0)$

b. y-intercept: $(0, -8)$

c. axis of symmetry: $x = -1$

d. vertex: $(-1, -9)$

e. Max/Min Value: -9

f. x-value that max/min the function: -1

g. Domain:

h. Range:

$(-\infty, \infty)$

$[-9, \infty)$

j. Increasing:

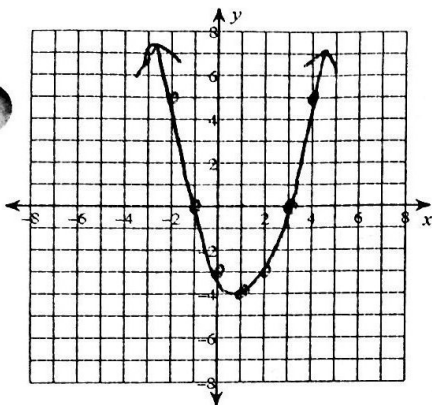
k. Decreasing:

$(-1, \infty)$

$(-\infty, -1)$

l. Direction of Opening: UP

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



10) a. x-intercept(s): $(3, 0), (-1, 0)$

b. y-intercept: $(0, -3)$

c. axis of symmetry: $x = 1$

d. vertex: $(1, -4)$

e. Max/Min Value: -4

f. x-value that max/min the function: 1

g. Domain:

h. Range:

$(-\infty, \infty)$

$[-4, \infty)$

j. Increasing:

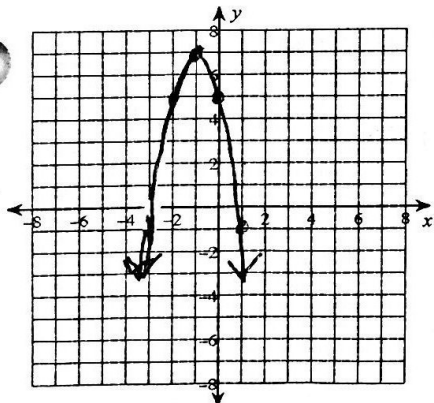
k. Decreasing:

$(1, \infty)$

$(-\infty, 1)$

l. Direction of Opening: \cup P

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



12) a. x-intercept(s): $(-2.5, 0), (1, 0)$

b. y-intercept: $(0, 5)$

c. axis of symmetry: $x = -1$

d. vertex: $(-1, 7)$

e. Max/Min Value: 7

f. x-value that max/min the function: -1

g. Domain:

h. Range:

$(-\infty, \infty)$

$(-\infty, 7]$

j. Increasing:

k. Decreasing:

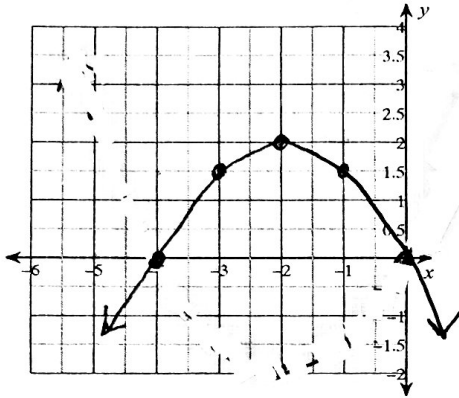
$(-\infty, -1)$

$(-1, \infty)$

l. Direction of Opening: \Downarrow Down

Sketch the graph. Then write the equation in all three forms.

13) $y = -\frac{1}{2}x^2 - 2x$



14) Vertex Form:

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

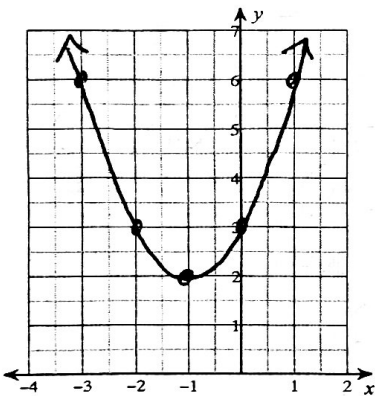
Intercept Form:

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

Standard Form:

$$y = -\frac{1}{2}x^2 - 2x$$

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



16) Vertex Form:

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

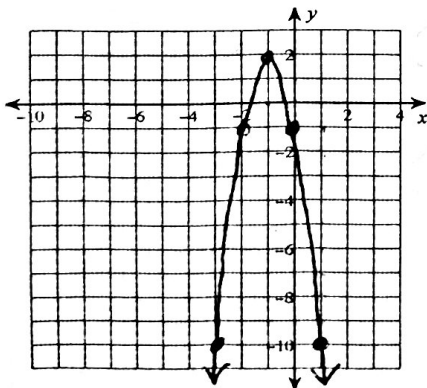
Intercept Form:

NA

Standard Form:

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

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



18) Vertex Form:

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

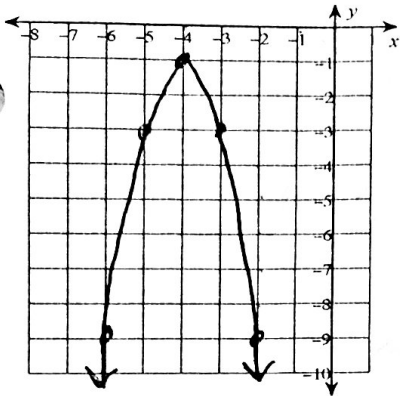
Intercept Form:

NA

Standard Form:

$$y = -3x^2 - 6x - 1$$

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



20) Vertex Form:

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

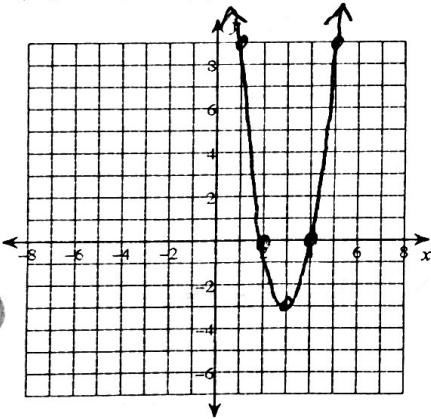
Intercept Form:

NA

Standard Form:

$$y = -2x^2 - 16x - 33$$

21) $y = 3(x - 4)(x - 2)$



22) Vertex Form:

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

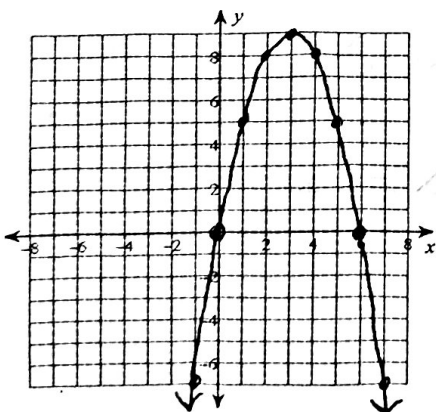
Intercept Form:

$$y = 3(x - 4)(x - 2)$$

Standard Form:

$$y = 3x^2 - 18x + 24$$

23) $y = -x(x - 6)$



24) Vertex Form:

$$y = -(x - 3)^2 + 9$$

Intercept Form:

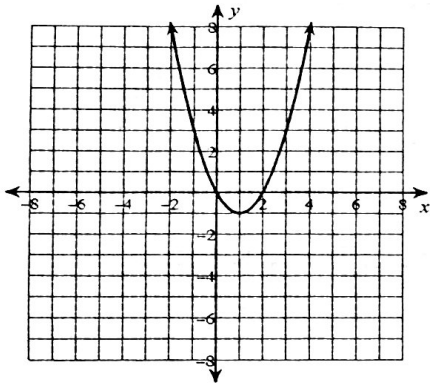
$$y = -x(x - 6)$$

Standard Form:

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

Write the equation from the graph.

25)



26) Vertex Form:

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

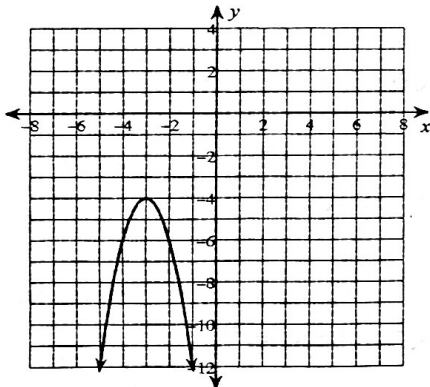
Intercept Form:

$$y = x(x-2)$$

Standard Form:

$$y = x^2 - 2x$$

27)



28) Vertex Form:

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

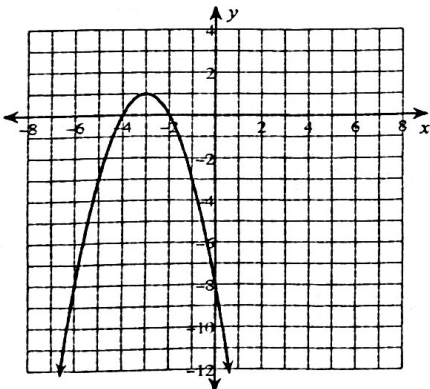
Intercept Form:

NA

Standard Form:

$$y = -2x^2 - 12x - 22$$

29)



30) Vertex Form:

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

Intercept Form:

$$y = -(x+4)(x+2)$$

Standard Form:

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