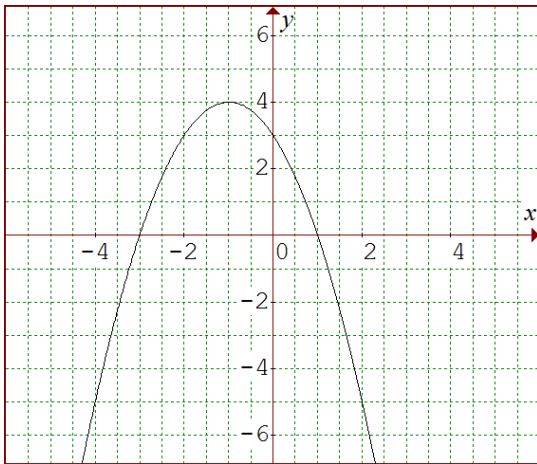


9-1 Quadratic Graphs and Their Properties

1. Given the quadratic graph below, identify the following:



a. Vertex: _____ Is vertex max or min? _____

b. Domain:

Range:

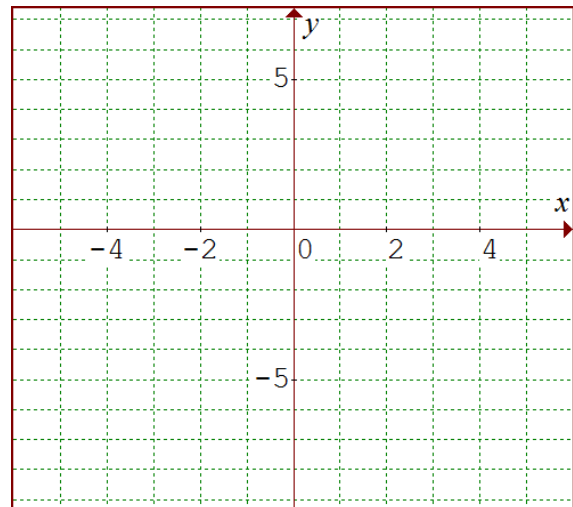
c. Equation of axis of symmetry:

2. Given the quadratic function $y = \frac{1}{2}x^2 - 8$

a. Choose appropriate values for x and complete the table below (min 5 points):

x	$y = \frac{1}{2}x^2 - 8$	y

b. Use your points to graph the function. Graph accurately to the edge of the grid.



3. Put the following quadratic functions in order from widest to narrowest:

$y = 2x^2$, $y = -\frac{1}{3}x^2$, $y = \frac{1}{4}x^2$

9-2 Quadratic Functions

1. Suppose Daniel kicks a soccer ball up into the air with an initial velocity of 64 feet per second, and the ball is 2 ft above the ground when it is kicked. The formula that describes the height of the ball at any time t is $h = -16t^2 + 64t + 2$

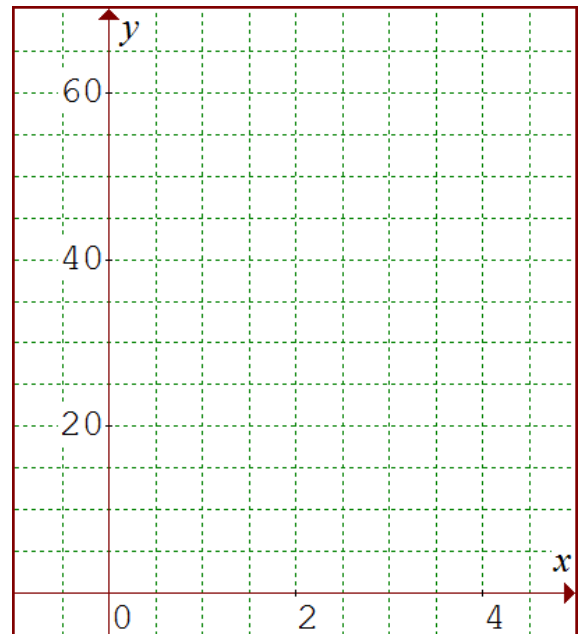
a. What is the equation of the axis of symmetry for this function?

b. What are the coordinates of the vertex for this function?

c. Choose appropriate values for x and complete the table below (min 5 points):

t	$h = -16t^2 + 64t + 2$	h

d. Use your points to graph the function.



e. What is the maximum height of the ball, and how long does it take to reach that height?

9-4 Solving Quadratic Equations by Factoring

Solve each equation by factoring. Show all your work clearly. Circle your answers.

1. $(2a+1)(a-3)=0$

2. $b^2-6b+5=0$

3. $4c^2+33c+35=0$

4. $3d^2-16d=12$

5. $6e^2-5e=6$

9-5 Completing the Square

Answer each question as directed.

1. Find the missing value and complete the square:

$$x^2 + 18x + \underline{\quad} = (\quad)^2$$

2. Find the missing value and complete the square

$$x^2 - \underline{\quad}x + 36 = (\quad)^2$$

Solve each quadratic equation by completing the square. Express your answer in simplest radical form.

3. $x^2 - 4x - 30 = 0$

4. $x^2 + 59 = -16x$

5. $4x^2 - 8x - 24 = 0$

9-6 The Quadratic Formula**Answer each question as directed.**

1. Given the quadratic equation

$$2x^2 - 16x = -25$$

- What value should be used for a in the quadratic formula?
- What value should be used for b in the quadratic formula?
- What value should be used for c in the quadratic formula?

2. Given the quadratic equation

$$9x^2 + 12x + 4 = 0$$

- What is the value of the discriminant?
- Use the discriminant to tell how many solutions the equation will have.

Solve each quadratic equation using the quadratic formula. Give your answer in the form indicated.

- 3.
- Give your answer in simplified radical form.**

$$x^2 - 2x = 4$$

Answer: _____

- 4.
- Give your answer rounded to the nearest hundredth.**
- $3x^2 + 2x - 4 = 0$

Answer: _____