REVIEW: QUADRATIC FUNCTIONS
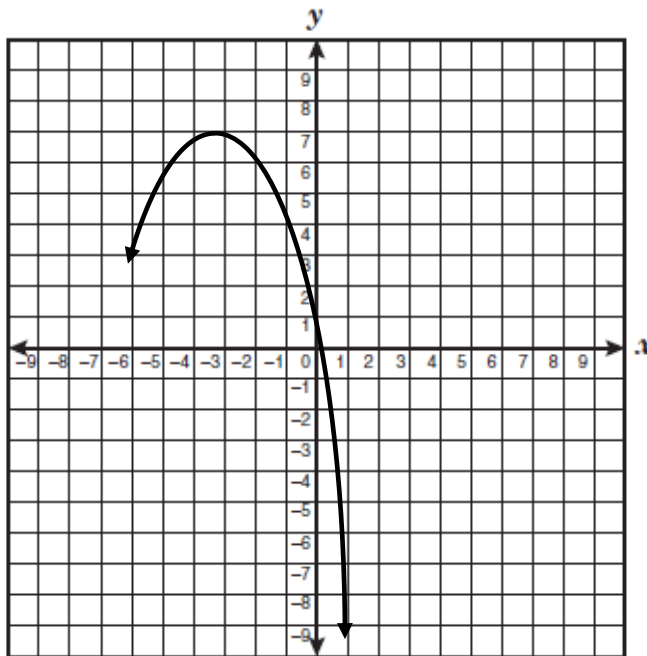
Use a calculator to find each of the following.

1. Find the zeros of $f(x) = -4x + 8$.

2. What are the solutions of $x^2 - 3x = 15$?

3. Find the vertex of $f(x) = 2x^2 + 3x - 8$.

4. Part of the graph of a quadratic function is shown.

If the line of symmetry for this quadratic equation is $x = -3.25$ between which two integers will the other part of the graph intersect the x-axis?

   A   -9 and -8
   B   -8 and -7
   C   -7 and -6
   D   -6 and -5

5. Which quadratic function has a vertex above the origin and opens downward?

   A $y = -x^2 + 3$

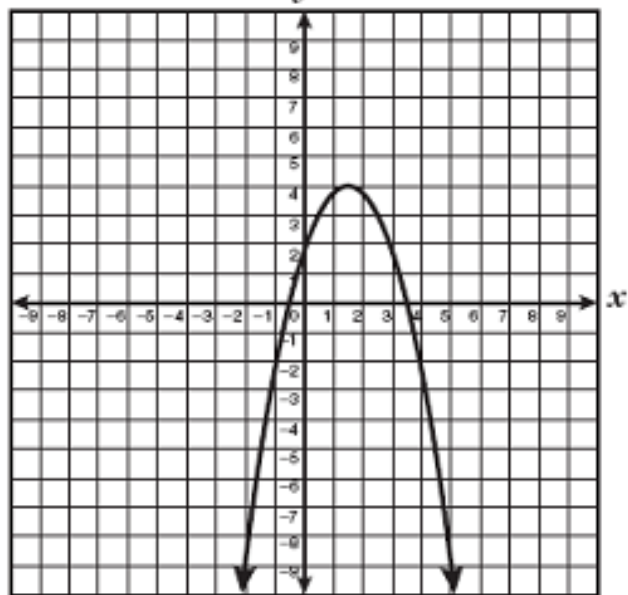   **B** $y = -x^2 - 1$

   C $y = x^2 + 5$

   D $y = x^2 - 2$

6. What are the y-intercepts and x-intercepts of the graph below. Write these points as ordered pairs.

   x-intercepts:_____

   y-intercept:_____

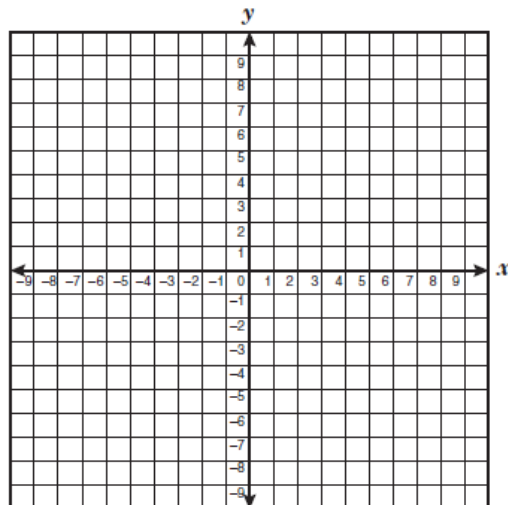7. Using the graph in #12 find the equation for the axis of symmetry.

8. The vertex of the graph of a quadratic function is (-1, 9). What are the zeros of this function if the point (2, 0) lies on the graph?
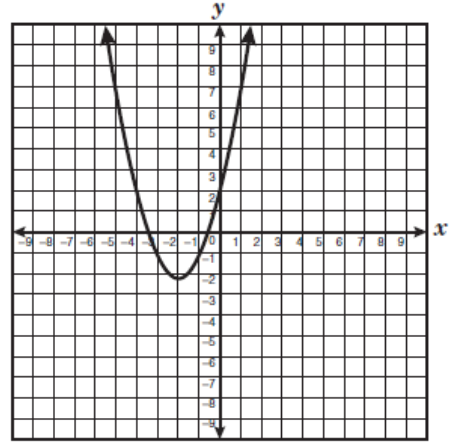
   A x = -2 and x = 4

   B x = -4 and x = 2

   C x = 2 and x = 0

   D Cannot be determined

9. The grid shows the intercepts of the graph of a quadratic function. Which of the following best represents the zeros of this function?

A   {0, 2}

B   {-2, -2.25}

C   {-3.5, -0.5}

D   {-4, 2}

10. Write the ordered pairs that represents the roots of the function $f(x) = 3x^2 + 3x - 6$.

11. Find the zeros of $y = -3x^2 - x + 4$.

12. Find the maximum of $y = -4x^2 + 12x - 5$.

Factor completely.
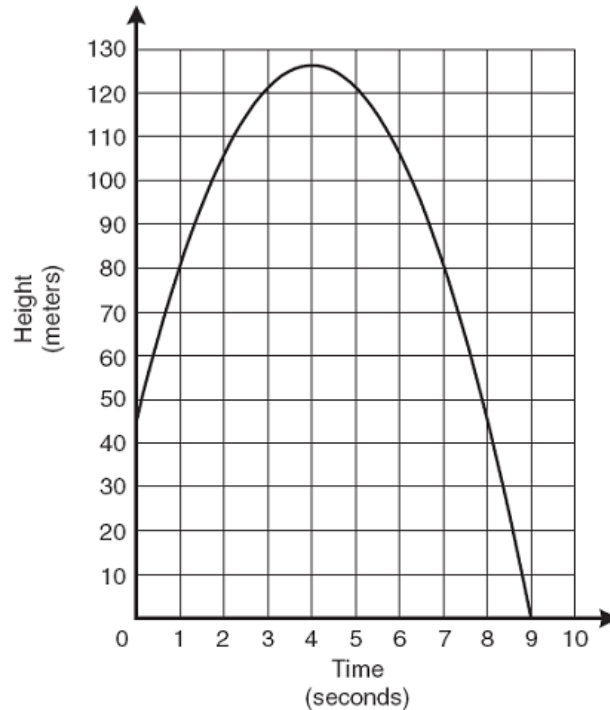
13. $x^2 - 4x - 32 =$_____

14. $3x^3 + 24x^2 + 21x =$_____

Solve by factoring.

15. $8x^2 - 32 = 0$

16. $y^2 = -y + 42$

The graph below show the height of a baseball from the time it is thrown from the top of a building until the time it hits the ground.

17. What conclusion can be made about the path of the baseball?

   A The baseball reached its maximum height at 9 seconds.
   B At 0 seconds, the baseball was 125 meters off the ground.
   C The baseball was in flight for 4 seconds.
   D The maximum height of the baseball was 125 meters.

18. At what time is the baseball at a height of 80 meters?

   A 1 second
   B 1 second and 7 seconds
   C 1 second and 4 seconds
   D 9 seconds

19. When did the baseball hit the ground?

   A 125 seconds   **C** 4 seconds
   B 9 seconds   **D** 45 seconds

20. Approximately how much time will elapse while the baseball is 70 meters or more above the ground?

   A 0.5 seconds   **C** 6.5 seconds

   B 4 seconds   **D** 7 seconds

21. What are the solutions that satisfy the equation $7x^2 - 28x = 0$?

22. Solve for the value of x in the equation: $x^2 + 5x - 24 = 0$

23. Identify the solutions to the following quadratic equation $y^2 = -y + 42$.

24. The area of a rectangle is represented by the equation $w^2 + 4w = 60$, where w is the width of the rectangle. Find the width.

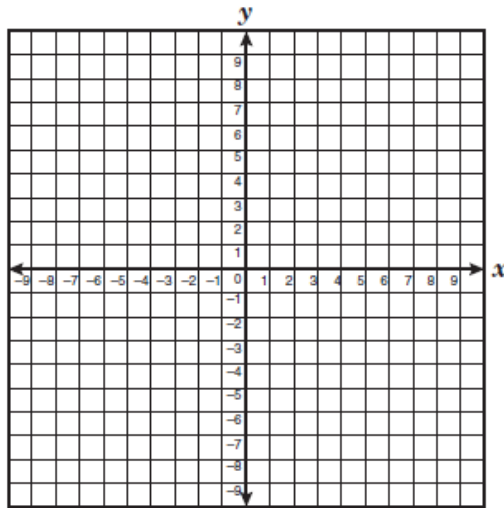25. Solve using the Quadratic Formula. Leave in radical form.

$x^2 - 5x + 5 = 0$

26. Callie is making an isosceles triangle to use as a model in math class. Its perimeter will be 24 inches. Callie uses the equation b = 24 – 2s to find b, the length of the triangle's third side, in terms of s, the length of each of its two congruent sides. Which statement is true?

    A. b is the dependent variable and s is the independent variable

    B. s is the dependent variable and b is the independent variable

    C. 24 is the dependent variable and s is the independent variable

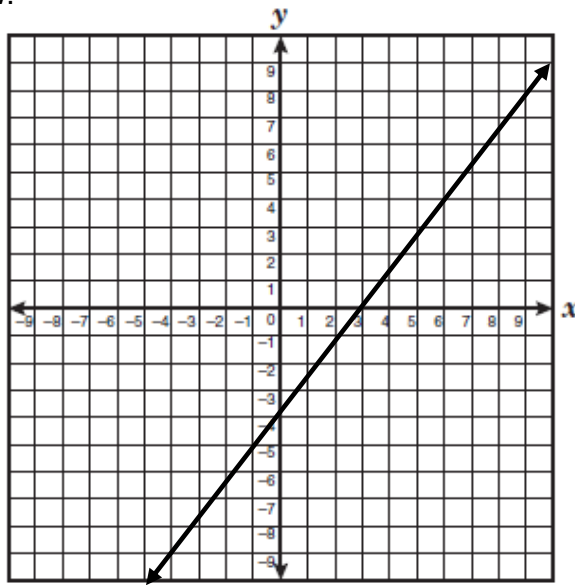   D. s is the dependent variable and 24 is the independent variable

27. Write the equation that describes the line that passes through the point (-6, 2) and is parallel to the line represented by the equation y = 2x – 4.

28. How does the graph of y = 2x – 5 compare to the graph of y = 3x – 5?

A. The slope of y = 2x – 5 is less steep.

B. The slope of y = 2x – 5 is steeper.

C. The graph of y = 2x – 5 has a greater y-intercept.

D. The graph of y = 2x – 5 has a smaller y-intercept.

29. The graph of a line is shown below.

If the slope of this line is multiplied by -2 and the y-intercept increases by 1, what is the equation of the new line?

30. There are 12 people on a jury. There are 4 more men than women. How many men are on the jury?

Equations:_____

_____