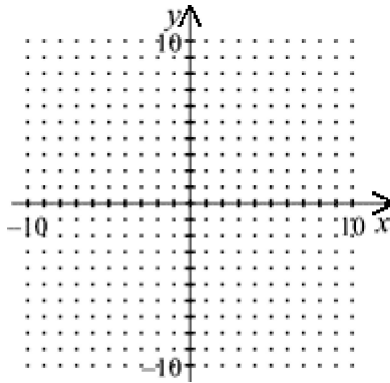
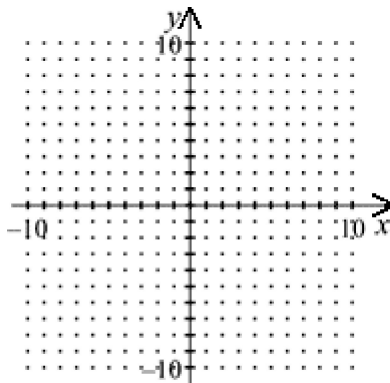


**Quadratics Review/Practice Test -- NO CALCULATOR ALLOWED ON #1-5**

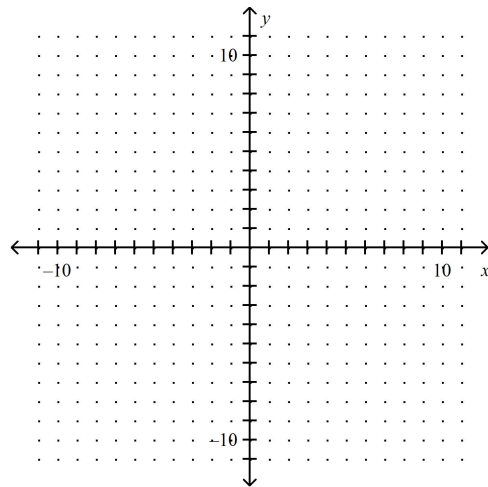
1.  $y = -(x+2)^2 + 3$



2.  $y = 2(x+1)(x+5)$



3.  $y = x^2 - 4x + 2$



4. How does the graph of  $y = \frac{1}{3}(x+3)^2 + 7$  compare to the graph  $y = x^2$ ?

5. Write an equation for the graph of  $y = x^2$  that is narrower, reflected in the x-axis, translated 4 units right, and translated 5 units down.

**Solve for x.**

6.  $2x^2 + 9 = 59$

7.  $-5(x - 8)^2 = -110$

**Factor the expression.**

8.  $3x^2 - 18x$

9.  $x^2 + 10x + 25$

10.  $81x^2 - 25$

11.  $5x^2 - 33x - 14$

**Solve the quadratic equation by factoring.**

12.  $x^2 + 6x = 0$

13.  $2x^2 - 9x - 18 = 0$

14.  $x^2 - 2x - 63 = 0$

15.  $2x^2 + 4x - 5 = 0$

16. A restaurant has a patio that is 8 feet wide and 12 feet long. The restaurant owners want to double the area of the patio by increasing the width and the length by the same distance  $x$ . Draw a picture to model the situation. Write an solve an equation to find  $x$ . Are the answer(s) valid? Explain.

**Write the expression as a complex number in standard form.**

17.  $(5 - 2i) - 2(3 + i)$

18.  $(5 - 2i) + (3 - 2i)$

19.  $(2 + 3i)(1 - 4i)$

20.  $\frac{8 + 7i}{3 - 4i}$

21. Solve the equation by completing the square.  
 $x^2 - 4x - 2 = 0$

**Write the quadratic equation in vertex form.  
Then identify the vertex.**

22.  $y = 3x^2 - 36x + 101$

23. Solve by the quadratic formula:  $2x^2 - 3x - 5 = 0$ .

24. The height,  $y$ , in feet of a volleyball that is hit can be modeled by the equation  $y = -16x^2 + 40x + 6$ , where  $x$  represents the time in seconds since the ball was hit.

a. From what height is the ball hit?

b. What is the maximum height reached by the ball?

c. When is the maximum height reached?

d. When does the ball hit the ground?