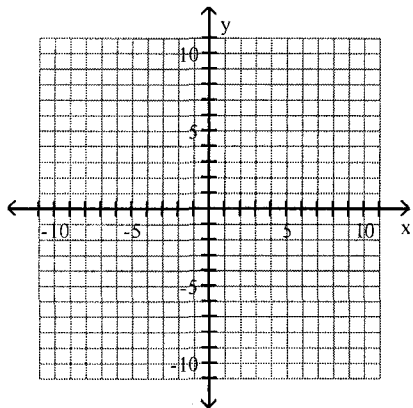


SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the direction the parabola opens, the coordinates of the vertex, the equation of the axis of symmetry and draw the graph.

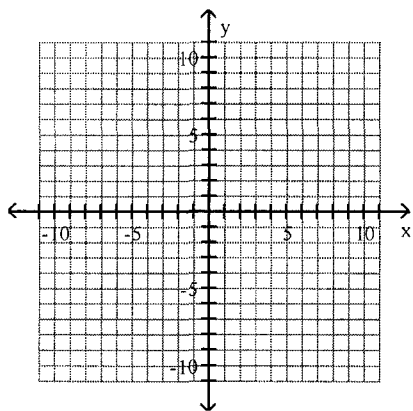
1) $y = (x + 5)^2 - 2$

1) _____



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

2) _____



Find the distance between the two points.

3) $(4, 5)$ and $(5, -2)$

3) _____

The center and radius of a circle are given. Write the equation of each circle in standard form.

4) Center: $(-9, 0)$, $r = \sqrt{11}$

4) _____

The coordinates of the center of a circle and a point on the circle are given. Find the radius of the circle.

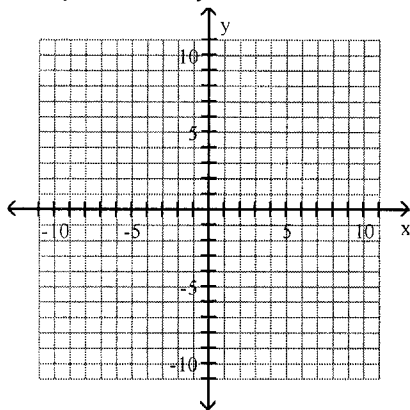
5) Center: $(-3, -2)$, point on the circle: $(2, -4)$

5) _____

Find the center and radius and draw the graph.

6) $x^2 + y^2 + 10x - 4y - 35 = 0$

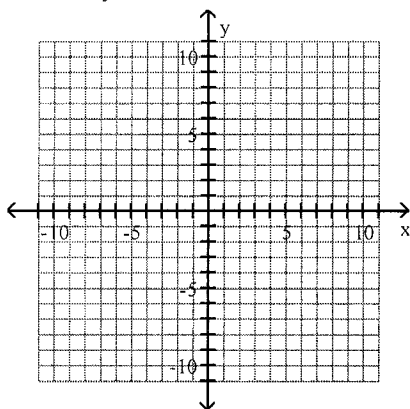
6) _____



Graph the ellipse. Give the points above, below, to the left, and to the right of the center.

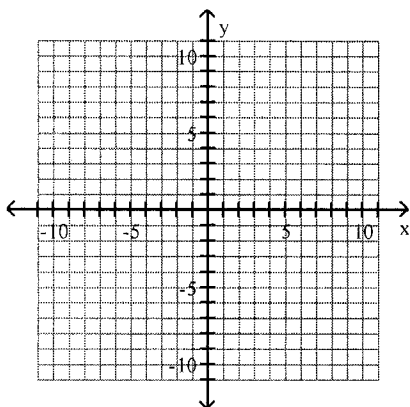
7) $9x^2 + 25y^2 = 225$

7) _____



8) $\frac{x^2}{9} + \frac{y^2}{49} = 1$

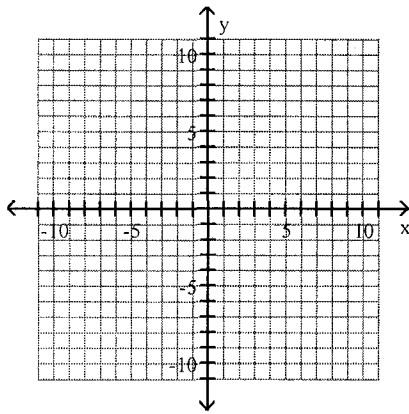
8) _____



Graph the hyperbola and label all intercepts.

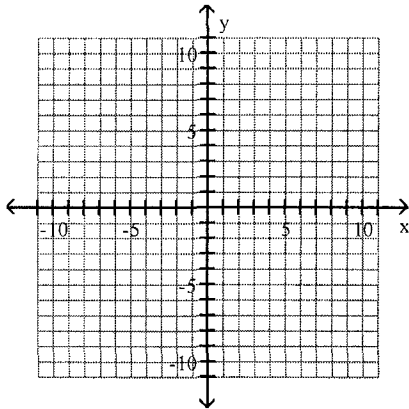
$$9) \frac{y^2}{4} - \frac{x^2}{25} = 1$$

9) _____



$$10) 9x^2 - 16y^2 = 144$$

10) _____



Solve the system of equations.

$$11) \begin{cases} x^2 + y^2 = 13 \\ x - y = 1 \end{cases}$$

11) _____

$$12) \begin{cases} xy = 1 \\ x^2 + y^2 = 2 \end{cases}$$

12) _____

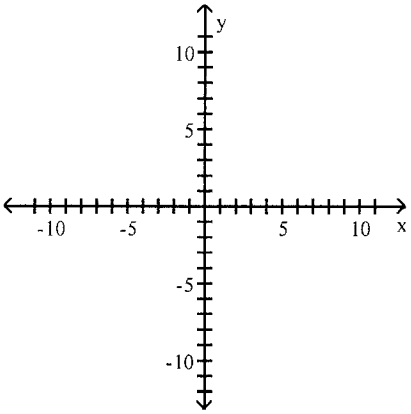
$$13) \begin{cases} y = x^2 - 6x + 9 \\ x + y = 5 \end{cases}$$

13) _____

Graph the inequality.

14) $x^2 + y^2 \geq 9$

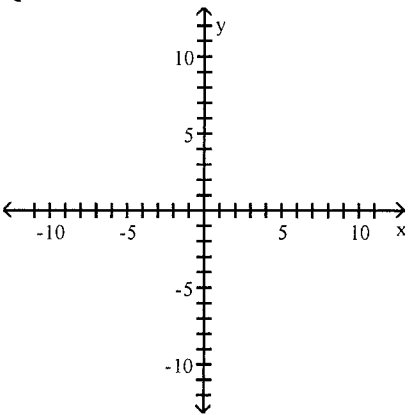
14) _____



Graph the solution set of the system of inequalities.

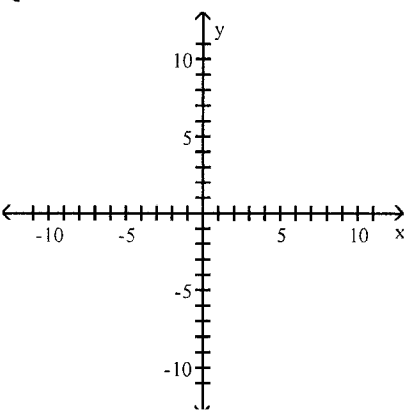
15) $\begin{cases} y > x^2 - 3 \\ 2y - x < 2 \end{cases}$

15) _____



16) $\begin{cases} \frac{x^2}{16} - \frac{y^2}{64} \leq 1 \\ \frac{x^2}{36} + \frac{y^2}{16} \leq 1 \\ y - x \leq 2 \end{cases}$

16) _____



Solve the problem.

- 17) If a rock is thrown vertically upward from the top of a building 80 feet high with an initial velocity of 64 feet per second, the height, h , above ground level after t seconds is given by $h = -16t^2 + 64t + 80$, where h is in feet and t is in seconds. 17) _____
- a. What is the maximum height the rock will reach?

- b. How many seconds will it take the rock to hit the ground?