

MATH 125 (INTERMEDIATE ALGEBRA) SAMPLE TEST CHAPTERS 13

INSTRUCTOR: ANNE SISWANTO; TOTAL POINTS: 100; TIME: 70 MINUTES.

Direction: No graphing calculator is allowed during test. Please write your answer in the answer blanks and show all work to get full credits.

(4 POINTS) Find the distance between the two points.

1) $(4, -3)$ and $(1, 1)$

1) _____

2) $(4, -2)$ and $(6, -6)$

2) _____

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

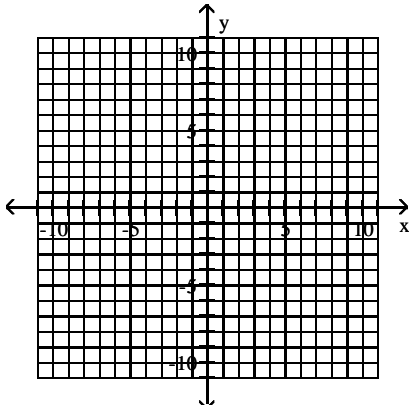
3) Center: $(-2, -4)$, $r = \sqrt{15}$

3) _____

(8 POINTS) Find the direction the parabola opens, the coordinates of the vertex, the equation of the axis of symmetry and draw the graph. Label at least 5 points on the graph.

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

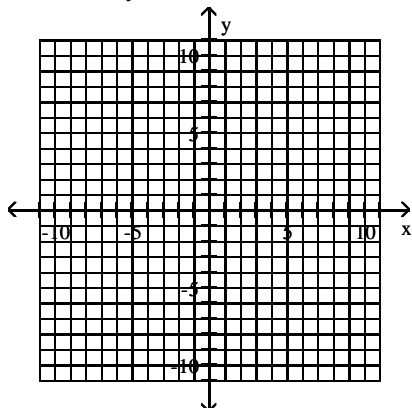
4) _____



(7 POINTS) Find the center and radius and draw the graph. Label at least 5 points on the graph

5) $(x - 3)^2 + (y + 4)^2 = 9$

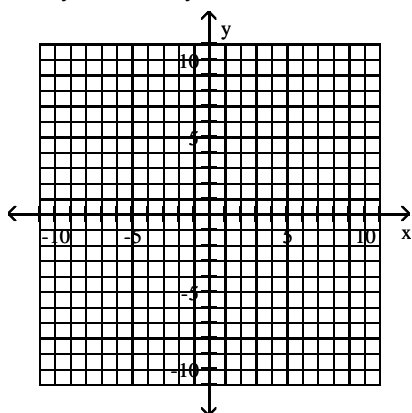
5) _____



6) (12 POINTS) Complete the squares. Find the center and radius and draw the graph. Label at least 5 points on the graph

6) _____

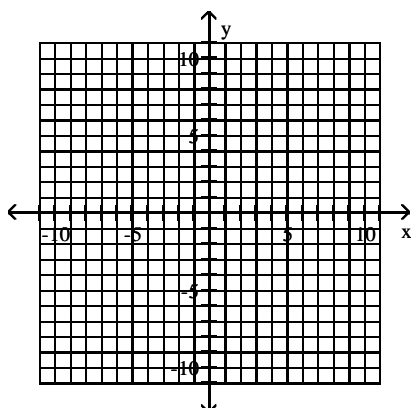
$x^2 + y^2 + 6x + 6y + 14 = 0$



(7 POINTS) Graph the ellipse. Give the points above, below, to the left, and to the right of the center.

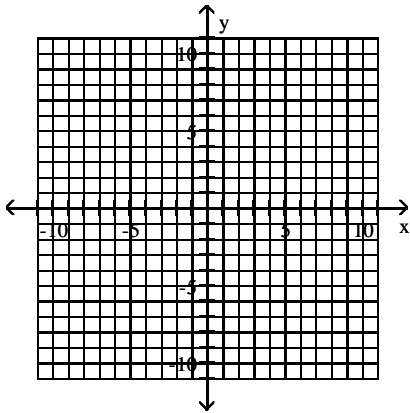
7) $4x^2 + 49y^2 = 196$

7) _____



$$8) \frac{(x - 4)^2}{25} + \frac{(y + 2)^2}{16} = 1$$

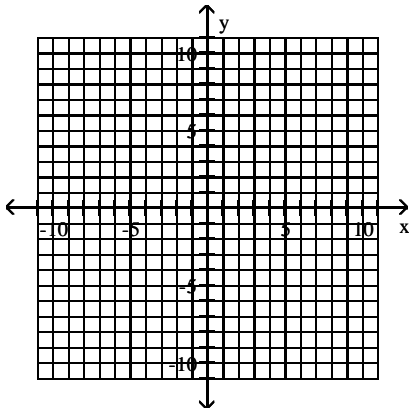
8) _____



(7 POINTS) Graph the hyperbola and label all intercepts.

$$9) 4y^2 - 9x^2 = 36$$

9) _____



(2 POINTS) Determine whether the graph of the equation is a circle, parabola, ellipse, or hyperbola. Do not graph.

$$10) 9y^2 + 36x^2 = 324$$

10) _____

$$11) 4y^2 - 9x^2 = 36$$

11) _____

$$12) x^2 + y^2 - 6x - 14y + 54 = 0$$

12) _____

13) $5x^2 + 2x - 9 - y = 0$

13) _____

(8 POINTS) Solve the system of equations.

14)
$$\begin{cases} y = 7x - x^2 \\ 2x - y = -6 \end{cases}$$

14) _____

Solve the system of equations.

15)
$$\begin{cases} x^2 + y^2 = 113 \\ x - y = 1 \end{cases}$$

15) _____

$$16) \begin{cases} 5x^2 - 2y^2 = -5 \\ 4x^2 + 2y^2 = 86 \end{cases}$$

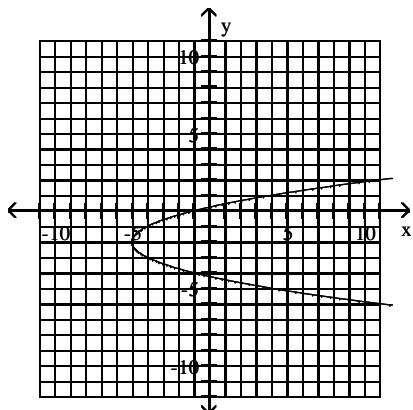
16) _____

$$17) \begin{cases} 7x^2 - y^2 = 21 \\ y = x^2 - 3 \end{cases}$$

17) _____

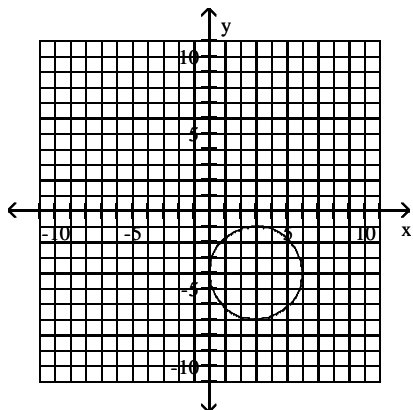
Answer Key
 Testname: M125T13S

- 1) 5
- 2) $2\sqrt{5}$
- 3) $(x + 2)^2 + (y + 4)^2 = 15$
- 4)



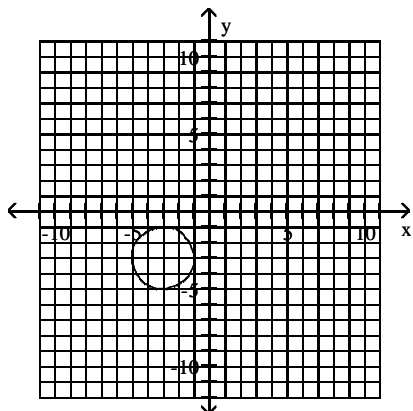
opens right; vertex $(-5, -2)$;
 axis of symmetry $y = -2$

5)



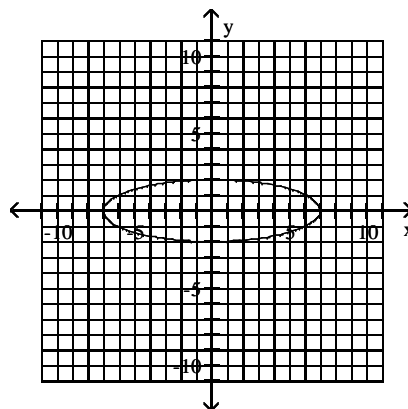
center $(3, -4)$; radius 3

6)



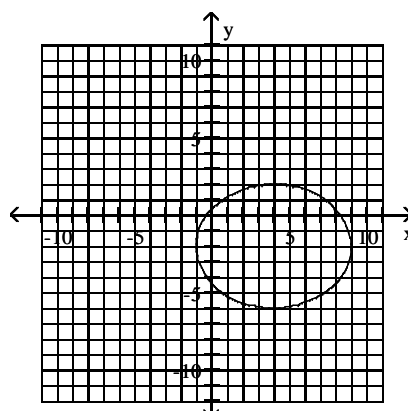
center $(-3, -3)$; radius 2

7)



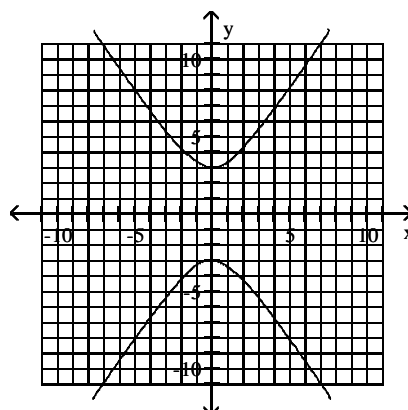
$(-7, 0), (7, 0), (0, 2), (0, -2)$

8)



$(-1, -2), (9, -2), (4, 2), (4, -6)$

9)



$(0, 3), (0, -3)$

- 10) ellipse
- 11) hyperbola
- 12) circle
- 13) parabola
- 14) $(3, 12), (2, 10)$
- 15) $(8, 7), (-7, -8)$
- 16) $(3, 5), (-3, 5), (3, -5), (-3, -5)$
- 17) $(-\sqrt{3}, 0), (\sqrt{3}, 0), (-\sqrt{10}, 7), (\sqrt{10}, 7)$