

## Practice Exercise 10

1. An equation of the  $y$ -axis is:

- A.  $x = 0$
- B.  $y = 0$
- C.  $x + y = 0$
- D.  $x - y = 0$
- E. The  $y$ -axis has no equation.

2. What are the  $(x, y)$  coordinates of the point at which the line determined by the equation  $3x + 2y = 12$  crosses the  $x$ -axis?

- A.  $(6, 0)$
  - B.  $(0, 6)$
  - C.  $(3, 2)$
  - D.  $(4, 0)$
  - E.  $(0, 4)$
- $3x + 2(0) = 12$   
 $3x = 12$   
 $x = 4$

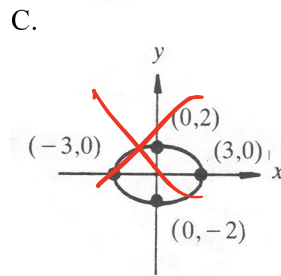
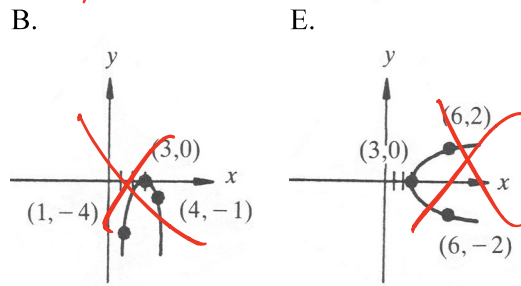
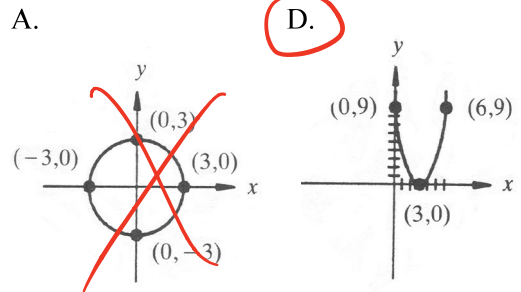
3. Which of the following is the center of a circle whose equation is  $x^2 - 2x + y^2 + 2y = 102$ ?

- A.  $(-2, 2)$
  - B.  $(2, -2)$
  - C.  $(0, 0)$
  - D.  $(1, 1)$
  - E.  $(1, -1)$
- $(x^2 - 2x + 1) + (y^2 + 2y + 1) = 102 + 1 + 1$   
 $(x - 1)^2 + (y + 1)^2 = 104$

4. Which of the following is the radius of a circle whose equation is  $2x^2 + 2y^2 = 128$ ?

- A. 8
  - B. 16
  - C. 32
  - D. 64
  - E. 128
- $x^2 + y^2 = 64$   
 $r = \sqrt{64}$

5. Which of the following is the graph of  $y = x^2 - 6x + 9$ ?



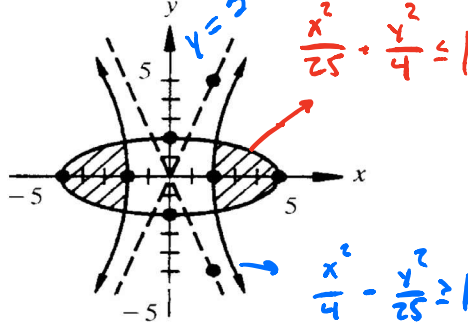
6. The graph of  $xy = 10$  is:

- A. a circle
- B. a hyperbola
- C. a parabola
- D. an ellipse
- E. a straight line

7. The graph of  $4x^2 - 9y^2 = 36$  is:

- A. a circle
- B. a hyperbola
- C. a parabola
- D. an ellipse
- E. a straight line

8. The shaded region in the figure represents the solution set of:



- A.  $\frac{x^2}{25} + \frac{y^2}{4} \leq 1$   
 $\frac{x^2}{25} - \frac{y^2}{4} \leq 1$
- B.  $\frac{x^2}{4} + \frac{y^2}{25} \leq 1$   
 $\frac{x^2}{4} - \frac{y^2}{25} \leq 1$
- C.**  $\frac{x^2}{25} + \frac{y^2}{4} \leq 1$   
 $\frac{x^2}{4} - \frac{y^2}{25} \geq 1$
- D.  $\frac{x^2}{25} + \frac{y^2}{4} \leq 1$   
 $\frac{x^2}{4} - \frac{y^2}{25} \leq 1$
- E.  $\frac{x^2}{4} + \frac{y^2}{25} \leq 1$   
 $\frac{x^2}{25} - \frac{y^2}{4} \geq 1$

9. If  $xy = 12$  (hyperbola) and  $x^2 + y^2 = 25$  (circle), a pair of values of  $x$  and  $y$  may be:  
~~A.~~ (2, 6)      **D.** (-3, -4)  
~~B.~~ (4, 5)      ~~E.~~ (-3, 4)  
~~C.~~ (3, -4)
- Don't work* →  $y = \frac{12}{x}$  → *Don't work*

10. Which graph below has **one** double real root?

