

Chapter Test C

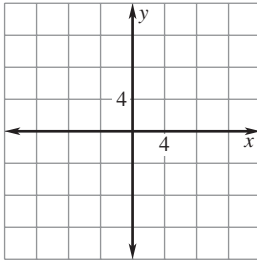
For use after Chapter 10

Find the distance between the two points. Then find the midpoint of the line segment connecting the two points.

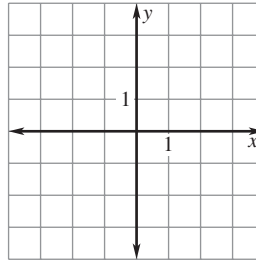
- $(-8, -4), (0, 0)$
- $(5, -4), (-4, 5)$
- $(10, 8), (6, -2)$
- $(-7, -3), (-5, -1)$

Graph the equation.

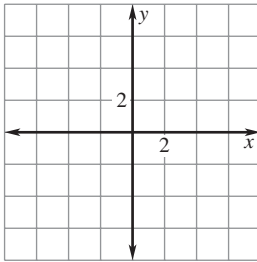
5. $x^2 + y^2 = 121$



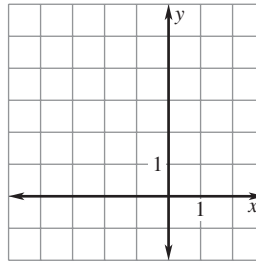
6. $y^2 = -9x$



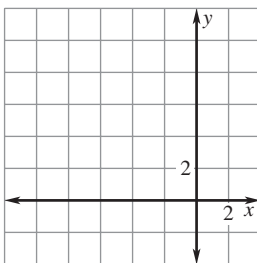
7. $3x^2 - y^2 = 12$



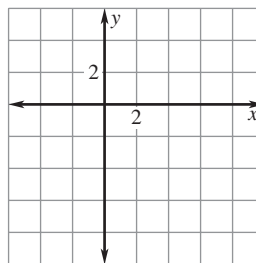
8. $x^2 + y^2 + 2x - 4y = -1$



9. $\frac{(x + 4)^2}{9} + \frac{(y - 5)^2}{4} = 1$



10. $\frac{(y + 2)^2}{9} - \frac{(x - 3)^2}{36} = 1$

**Answers**

1. _____

2. _____

3. _____

4. _____

5. Use grid at left.

6. Use grid at left.

7. Use grid at left.

8. Use grid at left.

9. Use grid at left.

10. Use grid at left.

Chapter Test C

For use after Chapter 10

Write an equation for the conic section.

11. Parabola with vertex at $(0, 0)$ and focus at $(0, 3)$
12. Circle with center at $(-3, 2)$ and radius 5
13. Ellipse with vertices at $(5, 0)$ and $(-5, 0)$, and co-vertices at $(0, 2)$ and $(0, -2)$
14. Ellipse with center at $(-3, 1)$, vertices at $(-1, 1)$ and $(-5, 1)$, and co-vertices at $(-3, 0)$ and $(-3, 2)$
15. Hyperbola with vertices at $(-4, 0)$ and $(4, 0)$ and foci at $(-6, 0)$ and $(6, 0)$
16. Hyperbola with foci at $(-2, -2)$ and $(8, -2)$ and asymptote with slope $\frac{4}{3}$

Classify the conic section and write its equation in standard form.

17. $9x^2 + 16y^2 - 144 = 0$
18. $y = 3x^2 - 5x + 3$
19. $16x^2 - 9y^2 - 144 = 0$
20. $2x^2 + 15y = 0$
21. $x^2 - 9y^2 + 12x - 36y + 9 = 0$
22. $x^2 + y^2 - 8x - 6y = 0$
23. $x^2 + y^2 + 4x - 6y - 3 = 0$
24. $x^2 + 4y^2 - 16x - 40y + 148 = 0$

Find the points of intersection, if any, of the graphs in the system.

25. $x^2 + 4y^2 = 36$
 $x^2 = -y + 3$
26. $\frac{x^2}{25} + \frac{y^2}{16} = 1$
 $16x^2 + y^2 - 2y - 8 = 0$

27. **Communications** The cross section of a television antenna dish is a parabola. The receiver is located at the focus, 5 feet above the vertex. Find an equation for the cross section of the dish. (Assume the vertex is at the origin.)
28. If the television antenna dish in Exercise 27 is 10 feet wide, how deep is it?

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____