

## 9

## CHAPTER REVIEW



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- Multi-Language Glossary
- Vocabulary practice

## REVIEW KEY VOCABULARY

- distance formula, p. 614
- ellipse, p. 634
- transverse axis, p. 642
- midpoint formula, p. 615
- vertices, pp. 634, 642
- conic sections, p. 650
- focus, foci, pp. 620, 634, 642
- major axis, p. 634
- general second-degree equation, p. 653
- directrix, p. 620
- co-vertices, p. 634
- discriminant, p. 653
- circle, p. 626
- minor axis, p. 634
- quadratic system, p. 658
- center, pp. 626, 634, 642
- hyperbola, p. 642
- radius, p. 626

## VOCABULARY EXERCISES

1. Copy and complete: A(n)   ?   is the set of all points in a plane equidistant from a point called the focus and a line called the directrix.
2. Copy and complete: The line segment joining the two co-vertices of an ellipse is the   ?  .
3. Copy and complete: The line segment joining the two vertices of a hyperbola is the   ?  .
4. **WRITING** Describe how the asymptotes of a hyperbola help you draw the hyperbola.

## REVIEW EXAMPLES AND EXERCISES

Use the review examples and exercises below to check your understanding of the concepts you have learned in each lesson of Chapter 9.

## 9.1 Apply the Distance and Midpoint Formulas

pp. 614–619

## EXAMPLE

Find the distance between  $(-5, 3)$  and  $(1, -3)$ . Then find the midpoint of the line segment joining the two points.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(1 - (-5))^2 + (-3 - 3)^2} = \sqrt{72} = 6\sqrt{2} \approx 8.49$$

$$M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = \left(\frac{-5 + 1}{2}, \frac{3 + (-3)}{2}\right) = (-2, 0)$$

## EXERCISES

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

5.  $(-6, -5), (2, -3)$
6.  $(-2, 5), (1, 9)$
7.  $(-3, -4), (2, 5)$

8. **SKYDIVING** A skydiver lands 200 yards west and 40 yards north of a target. A second skydiver lands 30 yards east and 140 yards south of the same target. How far from each other do the two skydivers land?

EXAMPLES  
1 and 3

on pp. 614–615  
for Exs. 5–8