## REVIEW KEY VOCABULARY

- sine, *p. 852*
- cosine, *p. 852*
- tangent, *p. 852*
- cosecant, *p. 852*
- secant, *p. 852*
- cotangent, *p. 852*
- angle of elevation, *p. 855*
- angle of depression, *p. 855*

- initial side of an angle, *p. 859*
- terminal side of an angle, *p. 859*
- standard position of an angle, *p. 859*
- coterminal angles, *p. 860*
- radian, *p. 860*
- sector, *p. 861*
- central angle, *p. 861*
- unit circle, *p. 867*

- quadrantal angle, *p. 867*
- reference angle, *p. 868*
- inverse sine, *p. 875*
- inverse cosine, *p. 875*
- inverse tangent, *p. 875*
- law of sines, *p. 882*
- law of cosines, *p. 889*

### VOCABULARY EXERCISES

1. **WRITING** *Describe* an angle in standard position.

2. Identify the relationship between the angles $-225°$ and $135°$.

3. What is the name of a circle with center at the origin and radius 1 unit?

4. Copy and complete: If $\cos \theta = a$ and $0 \le \theta \le \pi$, then the __?__ of $a$ equals $\theta$.

5. **WRITING** State the law of sines in words.

## 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 13.
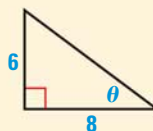
### 13.1 Use Trigonometry with Right Triangles
*pp. 852–858*

#### EXAMPLE

**Evaluate the six trigonometric functions of the angle θ.**

From the Pythagorean theorem, the length of the hypotenuse is $\sqrt{6^2 + 8^2} = \sqrt{100} = 10$.



$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{6}{10} = \frac{3}{5} \qquad \cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{8}{10} = \frac{4}{5} \qquad \tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{6}{8} = \frac{3}{4}$$

$$\csc \theta = \frac{\text{hyp}}{\text{opp}} = \frac{10}{6} = \frac{5}{3} \qquad \sec \theta = \frac{\text{hyp}}{\text{adj}} = \frac{10}{8} = \frac{5}{4} \qquad \cot \theta = \frac{\text{adj}}{\text{opp}} = \frac{8}{6} = \frac{4}{3}$$

#### EXERCISES

**EXAMPLES 1 and 3**
on pp. 852–854
for Exs. 6–7

6. In $\triangle ABC$, $a = 4$, $b = 5$, and $C = 90°$. Evaluate the six trigonometric functions of angle $B$.

7. **HOT AIR BALLOON** You are standing 50 meters from a hot air balloon that is preparing to take off. The angle of elevation to the top of the balloon is 28°. Find the height of the balloon.