

PREVIEW

What's the chapter about?

Chapter 14 is about **trigonometry**. In Chapter 14 you'll learn

- how to graph trigonometric functions and transformations of trigonometric graphs.
- how to use trigonometric identities and solve trigonometric equations.
- how to write and use trigonometric models.

KEY VOCABULARY

► Review

- identity, p. 13
- domain, p. 67
- range, p. 67
- x-intercept, p. 84
- quadratic form, p. 346

- local maximum, p. 374
- local minimum, p. 374
- asymptote, p. 465
- sine, p. 769
- cosine, p. 769
- tangent, p. 769

► New

- periodic function, p. 831
- cycle, p. 831
- period, p. 831
- amplitude, p. 831
- trigonometric identities, p. 848

PREPARE

Are you ready for the chapter?

SKILL REVIEW Do these exercises to review key skills that you'll apply in this chapter. See the given **reference page** if there is something you don't understand.

Graph the function. (Review Example 1, p. 123; Example 2, p. 250; Example 2, p. 624)

$$1. y = -|x + 2| - 4$$

$$2. y = 2(x + 2)^2 + 3$$

$$3. (x + 4)^2 + (y - 1)^2 = 9$$

Solve the equation. (Review Example 5, p. 258; Example 1, p. 291)

$$4. x^2 + 7x - 8 = 0$$

$$5. 9x^2 - 25 = 0$$

$$6. 3x^2 - x - 5 = 0$$

Evaluate the function without using a calculator. (Review Example 4, p. 786)

$$7. \sin 60^\circ$$

$$8. \tan 30^\circ$$

$$9. \cos \frac{\pi}{4}$$

$$10. \sin \pi$$

Evaluate the expression without using a calculator. Give your answer in both radians and degrees. (Review Example 1, p. 793)

$$11. \sin^{-1} \frac{\sqrt{2}}{2}$$

$$12. \cos^{-1} \frac{\sqrt{3}}{2}$$

$$13. \cos^{-1} 0$$

$$14. \tan^{-1} (-\sqrt{3})$$

STUDENT HELP

► Study Tip

"Student Help" boxes throughout the chapter give you study tips and tell you where to look for extra help in this book and on the Internet.

STUDY STRATEGY

Here's a study strategy!

Multiple Methods

There is often more than one way to do an exercise. Multiple methods can help in three situations. (1) If you get stuck using one method, try another. (2) Do an exercise more than one way to reinforce your understanding. (3) Check your work by using a different method.