LESSON 7.6 Practice B
For use with pages 473–480

Find \( \sin R \) and \( \sin S \). Write each answer as a fraction and as a decimal. Round to four decimal places, if necessary.

1. \( R \)
   \[
   
   \]
   \[
   
   
   

2. \( S \)
   \[
   
   \]
   \[
   
   
   

3. \( T \)
   \[
   
   \]
   \[
   
   
   

Find \( \cos A \) and \( \cos B \). Write each answer as a fraction and as a decimal. Round to four decimal places, if necessary.

7. \( AC \)
   \[
   
   \]
   \[
   
   
   

8. \( BC \)
   \[
   
   \]
   \[
   
   
   

9. \( AB \)
   \[
   
   \]
   \[
   
   
   

Use a cosine or sine ratio to find the value of each variable. Round decimals to the nearest tenth.

13. \( a \)
   \[
   
   \]
   \[
   
   
   

14. \( c \)
   \[
   
   \]
   \[
   
   
   

15. \( r \)
   \[
   
   \]
   \[
   
   
   

16. \( t \)
   \[
   
   \]
   \[
   
   
   

17. \( x \)
   \[
   
   \]
   \[
   
   
   

18. \( g \)
   \[
   
   \]
   \[
   
   
   

Use the 45°-45°-90° Triangle Theorem or the 30°-60°-90° Triangle Theorem to find the sine and cosine of the angle.

19. a 30° angle  
20. a 45° angle  
21. a 60° angle

Find the unknown side length. Then find \( \sin A \) and \( \cos A \). Write each answer as a fraction in simplest form and as a decimal. Round to four decimal places, if necessary.

22. Find the unknown side length. Then find \( \sin A \) and \( \cos A \). Write each answer as a fraction in simplest form and as a decimal. Round to four decimal places, if necessary.

23.

24.

25.

26. **Ski Lift** A chair lift on a ski slope has an angle of elevation of 28° and covers a total distance of 4640 feet. To the nearest foot, what is the vertical height \( h \) covered by the chair lift?

27. **Airplane Landing** You are preparing to land an airplane. You are on a straight line approach path that forms a 3° angle with the runway. What is the distance \( d \) along this approach path to your touchdown point when you are 500 feet above the ground? Round your answer to the nearest foot.

28. **Extension Ladders** You are using extension ladders to paint a chimney that is 33 feet tall. The length of an extension ladder ranges in one-foot increments from its minimum length to its maximum length. For safety, you should always use an angle of about 75.5° between the ground and the ladder.
   
a. Your smallest extension ladder has a maximum length of 17 feet. How high does this ladder safely reach on a vertical wall?
   
b. You place the base of the ladder 3 feet from the chimney. How many feet long should the ladder be?
   
c. To reach the top of the chimney, you need a ladder that reaches 30 feet high. How many feet long should the ladder be?