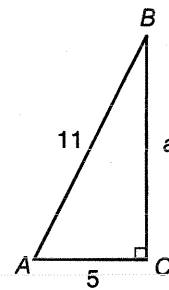


## Chapter 5 Test

1. Change  $225.639^\circ$  to degrees, minutes, and seconds. 1. \_\_\_\_\_
2. Write  $23^\circ 16' 25''$  as a decimal to the nearest thousandth of a degree. 2. \_\_\_\_\_
3. State the angle measure represented by 2.4 rotations clockwise. 3. \_\_\_\_\_
4. Identify all coterminal angles between  $-360^\circ$  and  $360^\circ$  for the angle  $-540^\circ$ . 4. \_\_\_\_\_
5. Find the measure of the reference angle for  $562^\circ$ . 5. \_\_\_\_\_

**For Exercises 6–8, refer to the figure.**

6. Find the value of the sine for  $\angle A$ . 6. \_\_\_\_\_
7. Find the value of the cotangent for  $\angle A$ . 7. \_\_\_\_\_
8. Find the value of the secant for  $\angle A$ . 8. \_\_\_\_\_



Exercises 6–8

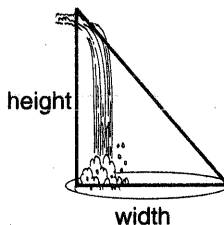
9. If  $\csc \theta = -2$ , find  $\sin \theta$ . 9. \_\_\_\_\_
10. Find  $\sin(-270^\circ)$ . 10. \_\_\_\_\_
11. Find the exact value of  $\cot 330^\circ$ . 11. \_\_\_\_\_
12. Find the exact value of  $\sec \theta$  for angle  $\theta$  in standard position if the point at  $(-3, 2)$  lies on its terminal side. 12. \_\_\_\_\_
13. Suppose  $\theta$  is an angle in standard position whose terminal side lies in Quadrant IV. If  $\cos \theta = \frac{12}{13}$ , find the value of  $\csc \theta$ . 13. \_\_\_\_\_

# Chapter 5 Test

For Exercises 14 and 15, refer to the figure. The angle of elevation from the far side of the pool to the top of the waterfall is  $75^\circ$ , and the distance is 185 feet.

14. Find the height of the waterfall to the nearest foot.

15. Find the width across the pool to the nearest foot.



14. \_\_\_\_\_

15. \_\_\_\_\_

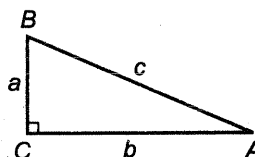
16. If  $0^\circ \leq x \leq 360^\circ$ , solve  $\cot x = -\sqrt{3}$ .

16. \_\_\_\_\_

17. Assuming an angle in Quadrant I, evaluate  $\sec\left(\tan^{-1}\frac{3}{4}\right)$ .

17. \_\_\_\_\_

18. Given triangle at the right, find  $B$  to the nearest tenth of a degree if  $a = 8$  and  $b = 20$ .



18. \_\_\_\_\_

For Exercises 19 and 20, round answers to the nearest tenth.

19. In  $\triangle ABC$ ,  $A = 47^\circ 15'$ ,  $B = 58^\circ 33'$ , and  $c = 23$ . Find  $a$ .

19. \_\_\_\_\_

20. If  $A = 37.2^\circ$ ,  $B = 17.9^\circ$ , and  $a = 22.3$ , find the area of  $\triangle ABC$ .

20. \_\_\_\_\_

21. Determine the number of possible solutions if  $A = 47^\circ$ ,  $a = 5$ , and  $b = 4$ .

21. \_\_\_\_\_

22. Determine the least possible value for  $c$  if  $A = 30^\circ$ ,  $a = 5$ , and  $b = 8$ .

22. \_\_\_\_\_

For Exercises 23-25, round answers to the nearest tenth.

23. In  $\triangle ABC$ ,  $A = 118^\circ$ ,  $b = 8$ , and  $c = 6$ . Find  $a$ .

23. \_\_\_\_\_

24. In  $\triangle ABC$ ,  $a = 9$ ,  $b = 5$ , and  $c = 12$ . Find  $B$ .

24. \_\_\_\_\_

25. If  $a = 12$ ,  $b = 24$ , and  $c = 30$ , find the area of  $\triangle ABC$ .

25. \_\_\_\_\_

**Bonus** The terminal side of an angle  $\theta$  in standard position coincides with the line  $3x + y = 0$  in Quadrant II. Find  $\csc \theta$  to the nearest thousandth.

**Bonus:** \_\_\_\_\_