

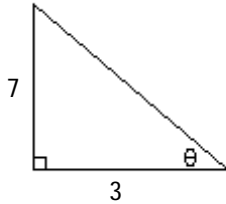
Chapter 8 Practice Test

Name \_\_\_\_\_

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the value of the indicated trigonometric function of the angle  $\theta$  in the figure. Give an exact answer with a rational denominator.

1)



1) \_\_\_\_\_

Find  $\sin \theta$ .

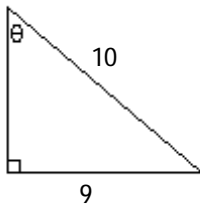
A)  $\sin \theta = \frac{\sqrt{58}}{3}$

B)  $\sin \theta = \frac{\sqrt{58}}{7}$

C)  $\sin \theta = \frac{7\sqrt{58}}{58}$

D)  $\sin \theta = \frac{3\sqrt{58}}{58}$

2)



2) \_\_\_\_\_

Find  $\tan \theta$ .

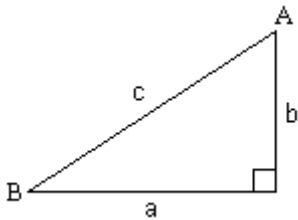
A)  $\frac{10\sqrt{19}}{19}$

B)  $\frac{9}{10}$

C)  $\frac{9\sqrt{19}}{19}$

D)  $\frac{\sqrt{19}}{10}$

Solve the right triangle using the information given. Round answers to two decimal places, if necessary.



3)  $b = 5$ ,  $B = 25^\circ$ ; Find  $a$ ,  $c$ , and  $A$ .

3) \_\_\_\_\_

A)  $a = 10.72$   
 $c = 11.83$   
 $A = 65^\circ$

B)  $a = 10.72$   
 $c = 12.83$   
 $A = 65^\circ$

C)  $a = 10.72$   
 $c = 11.83$   
 $A = 75^\circ$

D)  $a = 10.72$   
 $c = 12.83$   
 $A = 75^\circ$

Solve the problem.

4) A radio transmission tower is 220 feet tall. How long should a guy wire be if it is to be attached 6 feet from the top and is to make an angle of  $30^\circ$  with the ground? Give your answer to the nearest tenth of a foot. 4) \_\_\_\_\_

- A) 254.0 ft                      B) 440.0 ft                      C) 428.0 ft                      D) 247.1 ft

5) A surveyor is measuring the distance across a small lake. He has set up his transit on one side of the lake 130 feet from a piling that is directly across from a pier on the other side of the lake. From his transit, the angle between the piling and the pier is  $60^\circ$ . What is the distance between the piling and the pier to the nearest foot? 5) \_\_\_\_\_

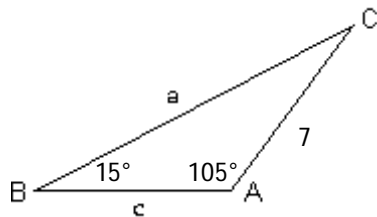
- A) 113 ft                      B) 75 ft                      C) 65 ft                      D) 225 ft

6) A sailboat leaves port on a bearing of  $S72^\circ W$ . After sailing for two hours at 12 knots, the boat turns  $90^\circ$  toward the south. After sailing for three hours at 9 knots on this course, what is the bearing to the ship from port? Round your answer to the nearest  $0.1^\circ$ . 6) \_\_\_\_\_

- A)  $S23.6^\circ W$                       B)  $N24.6^\circ E$                       C)  $N23.6^\circ E$                       D)  $S24.6^\circ W$

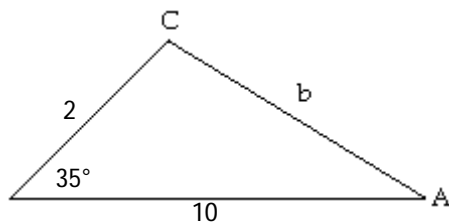
Solve the triangle.

7) 7) \_\_\_\_\_



- A)  $C = 55^\circ, a = 23.42, c = 26.12$                       B)  $C = 60^\circ, a = 26.12, c = 23.42$   
 C)  $C = 60^\circ, a = 23.42, c = 26.12$                       D)  $C = 65^\circ, a = 26.12, c = 23.42$

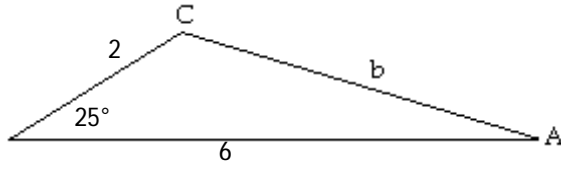
8) 8) \_\_\_\_\_



- A)  $b = 8.44, A = 7.8^\circ, C = 137.2^\circ$                       B)  $b = 7.44, A = 137.2^\circ, C = 7.8^\circ$   
 C)  $b = 8.44, A = 137.2^\circ, C = 7.8^\circ$                       D)  $b = 9.44, A = 7.8^\circ, C = 137.2^\circ$

Find the area of the triangle. If necessary, round the answer to two decimal places.

9)



A) 10.14

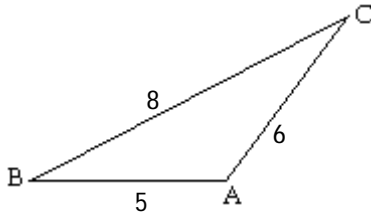
B) 5.44

C) 5.07

D) 2.54

9) \_\_\_\_\_

10)



A) 44.74

B) 14.98

C) 4.86

D) 195.03

10) \_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

11) Answer Key:

1. C
2. C
3. A
4. C
5. D
6. A
7. B
8. A
9. D
10. B

11) \_\_\_\_\_