Name: _____ Date: _____

Chapter 1 Practice Test

1. Is each statement true (T) or false (F)?
- **a)** You can solve a triangle using the sine law if you are given the length of all three sides.
- **b)** The sine, cosine, and tangent ratios can only be used for right triangles.
- **c)** You can use the sine law or cosine law to solve a right triangle.
- **d)** An angle of elevation is always measured from the horizontal.

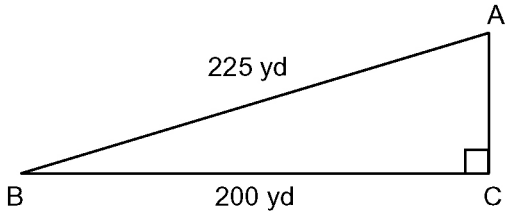
2. Which statement is true about right triangles?
- **A** The opposite side is always the shortest side in the triangle.
- **B** The adjacent side is always the shortest side.
- **C** The hypotenuse is always the longest side.
- **D** All angles are equal.

3. A 10-m long ladder is resting against a wall. The top of the ladder is 9 m above the ground. What angle does the ladder make with the ground?

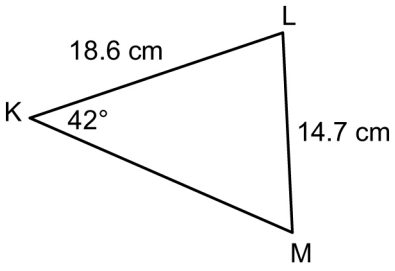
A 5.8° **B** 64.2°
C 90° **D** 115.8°

4. If a golfer uses a 64° wedge, he will send the ball into the air at an angle of 64°. He is standing 5 yd in front of a 35 ft tree. Will he be able to hit the ball over the tree?

5. Solve the right triangle.

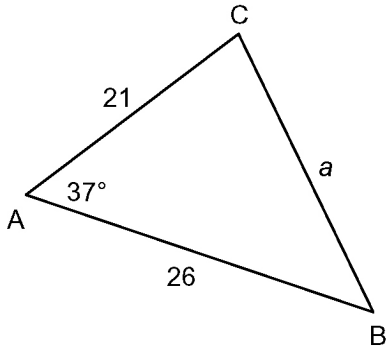


6. Solve the triangle.



7. Solve for the unknown in each triangle.

a)



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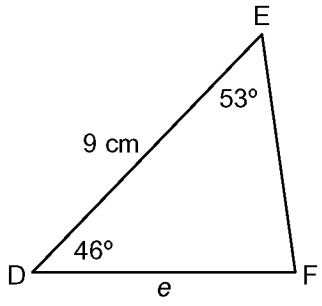

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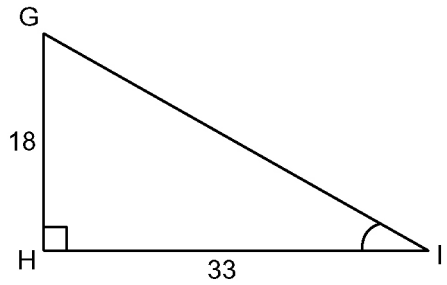

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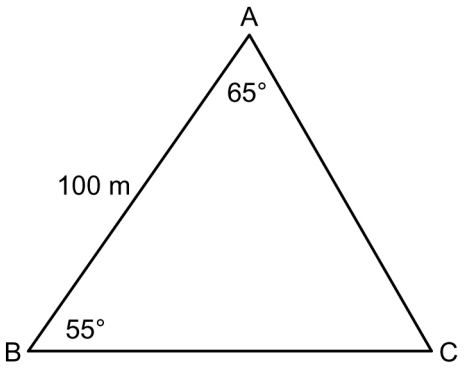
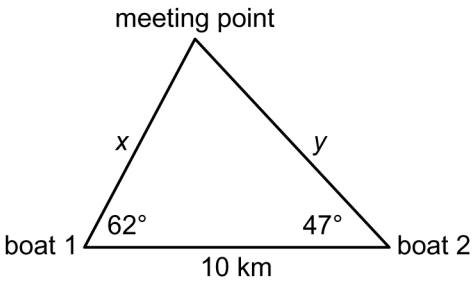
8. To temporarily support a wall during construction, the workers allow the wall to tilt towards them at an angle of 85° to the floor. If they support the wall with a piece of wood 8 ft up the wall and nailed 6 ft from the base of the wall, how long does this support need to be?

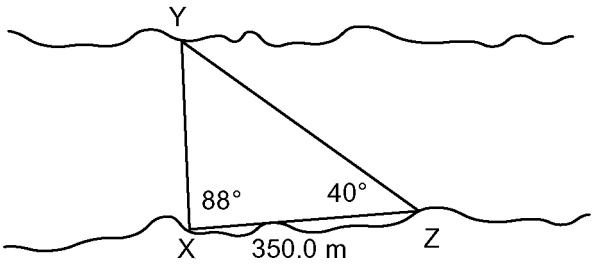
9. A new park is to be constructed with three climbing areas A, B, and C as shown. Determine the lengths of the other two sides in this triangle.



10. Two sailboats plan to meet at a mid-point. The boats are 10 km apart and are moving towards this point as shown in the diagram. How far will each boat need to travel to reach the meeting point?



11. To measure the distance across a river, a surveyor took measurements and drew the diagram shown. Determine the distance from X to Y.



12. A surveyor uses a transit instrument that is 1.4 m off of the ground to measure the height of a hill that is along a planned path of a road. She measures the angle of elevation to the top of the hill to be 5.7°. She knows that the horizontal distance to the top of the hill is 775 m. How high does the current road surface need to climb to reach the top of the hill?

13. From the top of her apartment building, Simone estimates that the angle of elevation to the top of the building across from her is 56°. The angle of depression to the bottom of the same building is 32°. If the two buildings are 25 m apart, what is the height of each building?