Montgomery College
Department of Mathematics
Rockville Campus

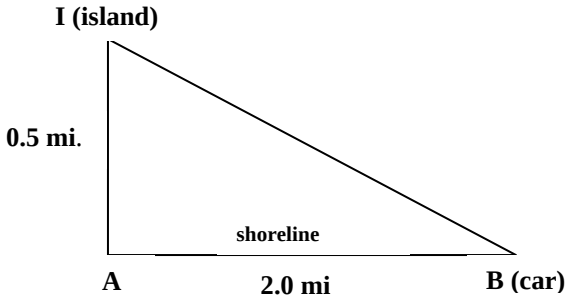
Practice problems for Lesson 52 (Applying Algebraic Concepts)

On the quiz for Lesson 52, and on the final exam, you will be required to show the equation you have solved and all the algebra in your solution. You will summarize your results in a sentence, and you will need to include appropriate units for your answer. (No credit will be given for answers only.)

1. Grass seed A costs $1.75 per pound and grass seed B costs $2.25 per pound. How much of each should you use in order to make 70 pounds of a mixture that would cost $1.85 per pound?

   Answer: This mixture should include _____ of grass seed A and _____ of grass seed.

2. Two men are marooned on an island in the middle of a river. The shortest distance to the riverbank is 0.5 miles (distance IA in the diagram). The men have left their car at point B, 2.0 miles downstream from point A. John swims from the island to point A then hikes to the car at point B. Robert swims directly from the island to point B. How far did each man travel getting from the island to their car? (State your answers to one tenth of a mile.)



   Answer: John traveled _____and Robert traveled _____.

3. There were 72 tickets sold for a basketball game. Tickets for students were $1.75 each, and tickets for adults were $2.50 each. The total amount collected was $141. How many student tickets and how many adult tickets were sold?

   Answer: _____student tickets and _____adult tickets were sold.

4. The length of a rectangle is three less than twice the width. The area of the rectangle is 44 square centimeters. Find the dimensions of the rectangle.

   Answer: The width of the rectangle is _____ and the length is _____.

5. The height of a triangle is four times the length of the base. The area of the triangle is 18 square feet. Find the height and the base of the triangle.

   Answer: The height of the triangle is _____, and the base is _____.

6. Last month Bill purchased 2 paperback and 3 books on tape for $46. This month he bought 3 paperbacks and 2 books on tape for $39. Find the price of each paperback an the price of each book on tape.

   Answer: Each paperback cost _____, and each book on tape cost _____.

7. Susan wants to draw a right triangle with one side 10cm. long and hypotenuse that is 3 times the length of the third side. Find the length of the hypotenuse and the third side of the triangle.

   Answer: The hypotenuse is _____ long, and the third side is _____ long.

Answers

1. The mixture includes 56 lbs. of seed A and 14 lbs. of seed B.
2. John travels 2.5 miles, and Robert swims 2.1 miles.
3. 52 student and 20 adult tickets were sold.
4. The width of the rectangle is 11/2 cm., and the length is 8 cm.
5. The height of the triangle is 12 feet, the base is 3 feet.
6. Each paperback book costs $5, and each book on tape costs $12.
7. The hypotenuse is 10.6 cm. in length, and the third side is 3.5 cm. long.