

0.4 Cosine Practice

Round all lengths to the nearest hundredth and angles to the nearest degree.

1. Use your calculator to find the following pairs of ratios to four decimal places.

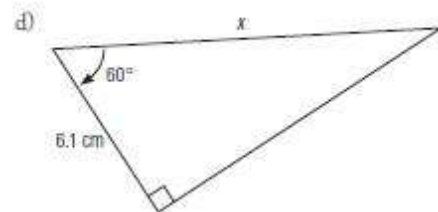
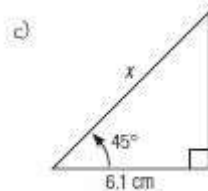
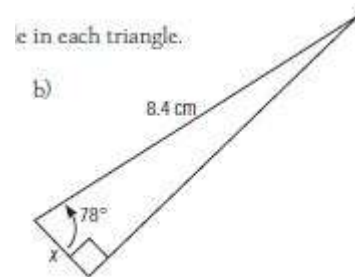
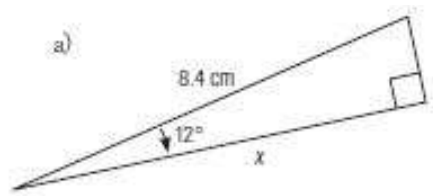
a. $\cos 23 =$ _____
 $\sin 67 =$ _____

b. $\cos 83 =$ _____
 $\sin 7 =$ _____

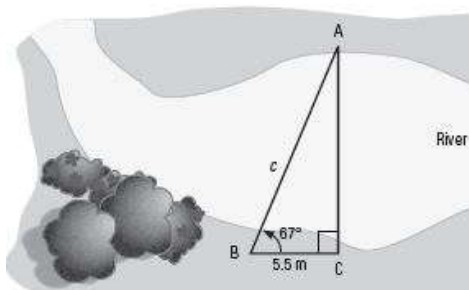
b. $\cos 45 =$ _____
 $\sin 45 =$ _____

d. $\cos 37 =$ _____
 $\sin 53 =$ _____

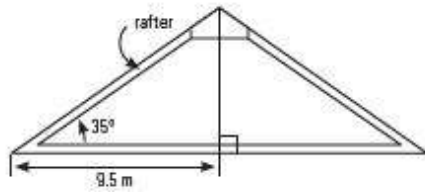
2. Find the measure of the indicated side of each triangle.



3. How far from the base of a flagpole must a guy wire be fixed if the wire is 12 metres long and it makes an angle of 63° with the ground?
4. Reba walks 25 yards across the diagonal of a rectangular field. If the angle between the width and the diagonal is 67° , how wide is the field?
5. Ariel needs to string a bridge line across a river from A to B. What must the length of the bridge line be?



6. What is the length of a rafter that makes an angle of 35° with the floor of an attic whose centre is 9.5 metres from the edge?



7. An airplane starts descending at an angle of depression of 5° . If the horizontal distance to its destination is 500 kilometres, what is the actual distance the airplane will travel before it lands?
8. A screw conveyor is sometimes used to move grains and other materials up an incline. How far from the base of a barn must a 20-metre screw conveyor be placed if the angle of elevation to the loft is to be 30° ?
9. What is the slant height of a cone if the diameter is 20 centimetres and the angle made with its base is 65° ?

10. A hot air balloon travels 1.2 kilometres horizontally from its take-off point. The angle of elevation from the take-off point to the balloon is 15° . How far did the balloon travel?
11. What horizontal distance has a car travelled if the incline of the road averages 3.2° and the car's odometer reads 8.5 kilometres?
12. The horizontal distance between two clothesline poles is 3.4 metres. When wet clothes are hung in the middle of the line, it sags at an angle of depression of 6° . How long is the clothesline?