

Cosine Ratio Worksheet

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

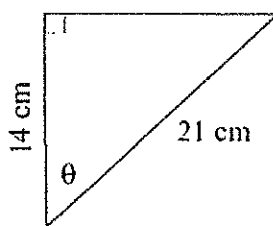
a) $\cos 23^\circ =$
 $\sin 67^\circ =$

b) $\cos 83^\circ =$
 $\sin 7^\circ =$

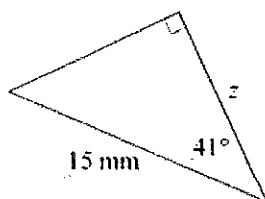
c) $\cos 45^\circ =$
 $\sin 45^\circ =$

2) Find the measure of the indicated side or angle in each triangle (to one decimal place).

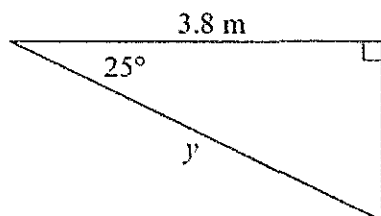
a)



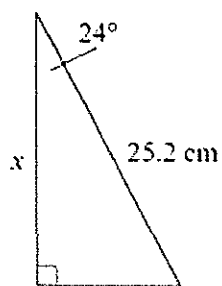
b)

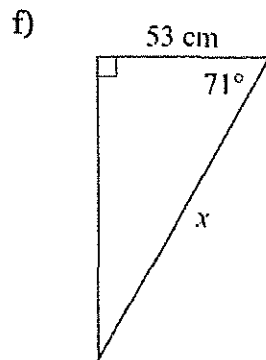
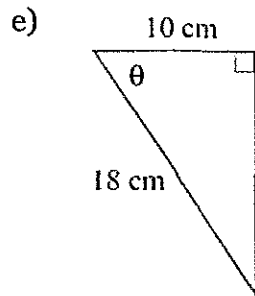


c)



d)

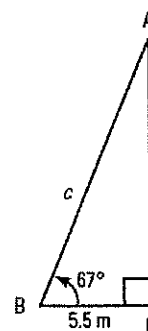
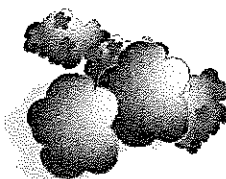




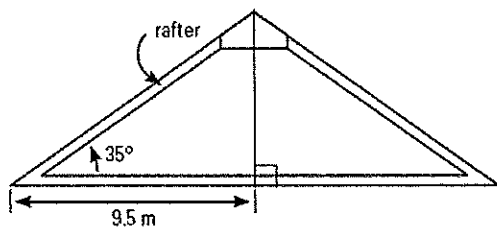
DRAW A DRAGRAM FOR ALL WORD PROBLEMS

- 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) Aaron needs to string a bridge line across the river from A to B. What must the length of the bridge line be, given his measurements?



- 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 km, 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 30° ?

- 9) What is the slant height of a cone if the diameter is 20 cm and the angle made with it is 65° ?
- 10) A hot air balloon travels 1.2 km 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 km?
- 12) The horizontal distance between two clothesline poles is 3.4 m. 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?

Answers:

- 1) a) 0.9205 b) 0.1219 c) 0.7071 2) a) 48.2° b) 11.3 mm c) 4.2 m d) 23.0 cm e) 56.3°
f) 162.8 cm 3) 5.4 m 4) 9.8 yd 5) 14.1 m 6) 11.6 m 7) 502 km 8) 17.3 m 9) 23.7 cm
10) 1.24 km 11) 8.49 km 12) 3.42 m