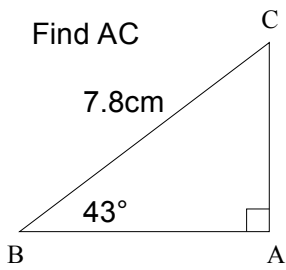


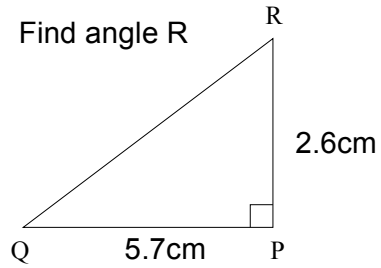
Trigonometry Homework

1)

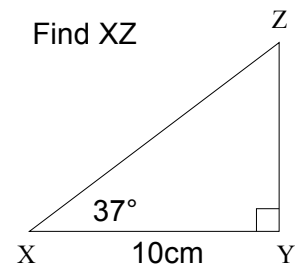
(a)



(b)



(c)



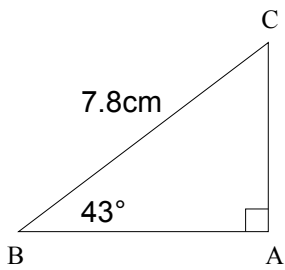
2) A ladder 5m long is leaning against a wall so that the angle between the ladder and the ground is 65° . How far up the wall does the ladder reach?

3) A boat leaves harbour A and sails 40km due east to a point B. It then turns and travels 70km due south to C. How far, and on what bearing, does it need to sail to return to A

Trigonometry Homework – Answers

1)

(a)

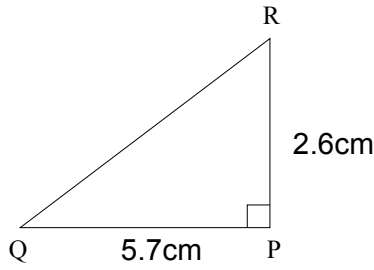


$$\frac{AC}{7.8} = \sin 43^\circ$$

$$AC = 7.8 \sin 43^\circ$$

$$= 5.32 \text{ cm}$$

(b)

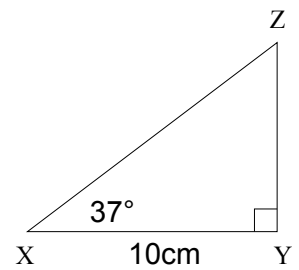


$$\frac{5.7}{2.6} = \tan R$$

$$R = \tan^{-1}\left(\frac{5.7}{2.6}\right)$$

$$= 65.5^\circ$$

(c)



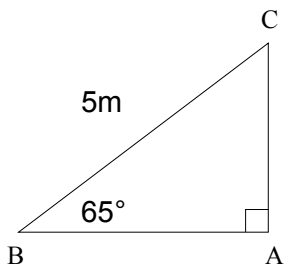
$$\frac{10}{XZ} = \cos 37^\circ$$

$$10 = XZ \times \cos 37^\circ$$

$$\frac{10}{\cos 37^\circ} = XZ$$

$$XZ = 12.5 \text{ cm}$$

2)

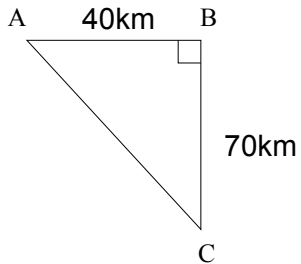


$$\frac{AC}{5} = \sin 65^\circ$$

$$AC = 5 \sin 65^\circ$$

$$= 4.53 \text{ m}$$

3)



$$\frac{40}{70} = \tan C$$

$$C = \tan^{-1}\left(\frac{40}{70}\right)$$

$$= 29.7^\circ$$

$$\text{Bearing} = 360 - 29.7 = 330.3^\circ$$

$$\text{Distance: } CA^2 = 40^2 + 70^2$$

$$= 6500$$

$$CA = \sqrt{6500}$$

$$= 80.6 \text{ km}$$