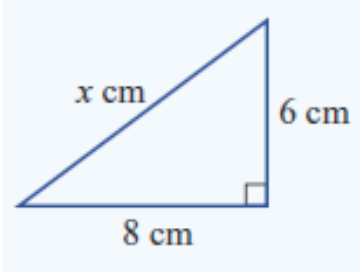
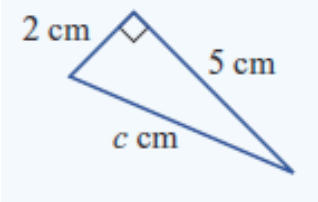
Year 10 Mathematics
Trigonometry Practice Test 1

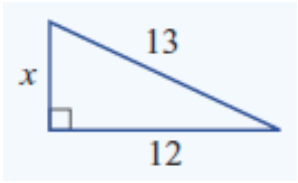
1 Find the length of the hypotenuse of the triangle shown.



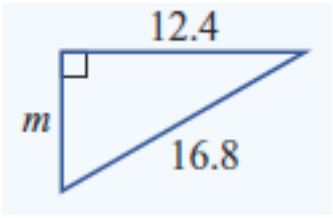
2 Find the length of the hypotenuse in this triangle to 1 decimal place.



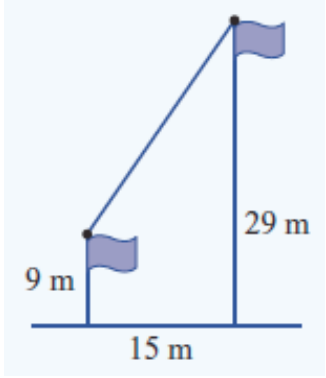
3 Determine the value of x in the triangle shown using Pythagoras' Theorem



4 Determine the value of m in the triangle, correct to 1 decimal place

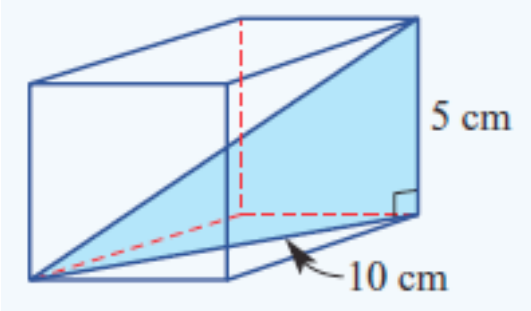


5 Two flagpoles are 15 metres apart and a rope links the tops of both poles. Find the length of the rope if one flagpole is 9 m high and the other is 29 m high.



6 Two hikers leave their camp (P) at the same time. One walks due east for 9 km; the other walks due south for 9.5 km. How far apart are the two hikers at this point? (Give your answer to 1 decimal place.)

7 Find the distance from one corner of this rectangular prism to the opposite corner, correct to 2 decimal places

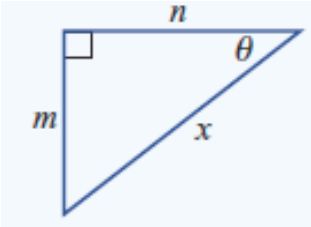


8 Label the sides of the triangle O, A, H and write the ratios for

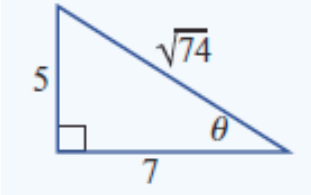
a) sin θ

b) cos θ

c) tan θ

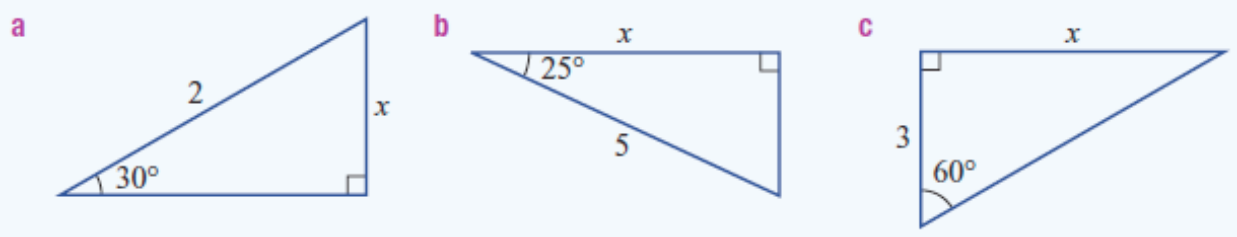


9 Write down the ratio of cos θ for this triangle

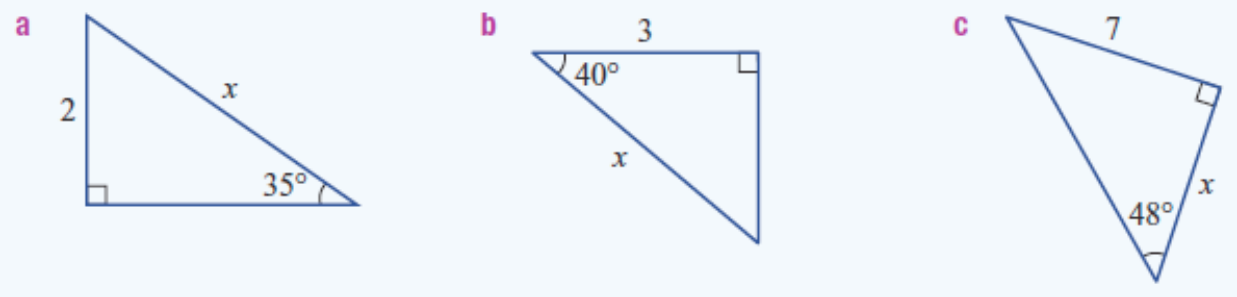


10 Find the value of x, correct to 2 decimal places, for $\cos 30° = \frac{x}{12}$

11. Find the value of the unknown length (x) in these triangles. Round your answer to 2 decimal places where necessary.



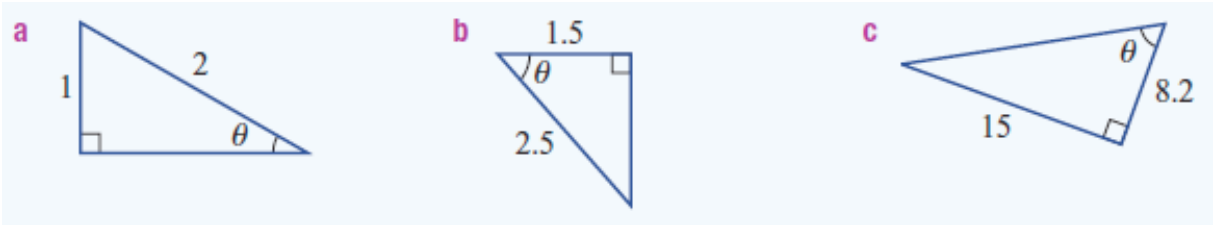
12 Find the value of the unknown length (x) in these right-angled triangles. Round you're answer to2 decimal places.



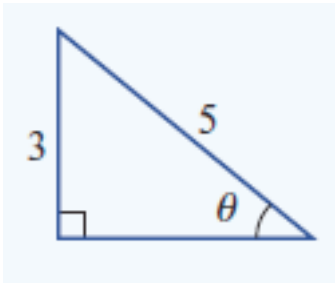
13 Find the angle θ , correct to the nearest degree, in each of the following

a) $\sin\theta = \frac{2}{3}$ b) $\cos\theta = \frac{1}{2}$ c) $\tan\theta = 1.7$

14 Find θ in the following right-angled triangles, correct to 2 decimal places where necessary



15 Find the angle θ to the nearest minute

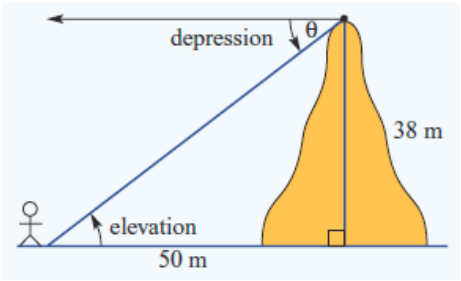


16 To find the height of a tall building, Johal stands 85 m away from its base and measures the angle of elevation to the top of the building as 70° . Find the height of the building, correct to the nearest metre.

17 From the observation room of Centrepoint Tower in Sydney, which has a height of 160 m, the angle of depression of a boat moored at Circular Quay is observed to be 8° .How far from the base of the tower is the boat, correct to the nearest metre?

18 a) Find the angle of depression from the top of the hill to a point on the ground 50 m from the middle of the hill. Answer to the nearest degree.

b) What is the angle of elevation from the point on the ground to the top of the 38 m hill? Give your answer to the nearest degree.



19 A walker leaves camp (C) and walks on a bearing of 250Åã for 8 km. How far west of camp (x km) is the walker? Show all this information on a right-angled triangle. You do not need to solve for x.

20 A bushwalker walks 5 km on a bearing of 150° from point A to point B . Find how far east point B is from point A .

Answers

1 Hypotenuse length = 10 cm

2 Hypotenuse length = 5.4 cm

3 x = 5

4 m = 11.3

5 The rope is 25 metres long

6 The hikers are 13.1 km apart

7 The distance between the opposite corners is 11.18 cm.

8 a) $\sin\theta = \frac{m}{x}$ b) $\cos\theta = \frac{n}{x}$ c) $\tan\theta = \frac{m}{n}$

9 $\cos\theta = \frac{7}{\sqrt{74}}$

10 10.39

11 a) x = 1 b) x = 4.53 c) x = 5.20

12 a) x = 3.49 b) x = 3.92 c) x = 6.30

13 a) 42° b) 60° c) 60°

14 a) 30° b) 53.13° c) 61.34°

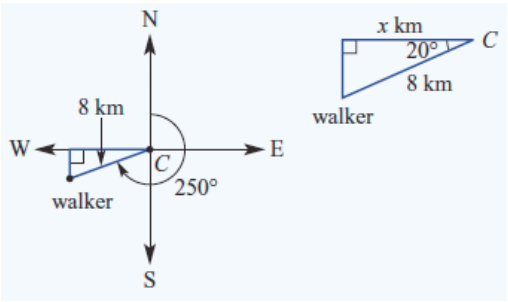
15 36° 52'

16 The building is 234 m tall

17 The boat is about 1138 m from the base of the tower.

18 a) The angle of depression is 37° b) The angle of elevation is 37°

19



20 Point B is 2.5 km east of point A .