

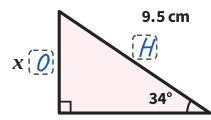
Trigonometry: Missing Sides, Mixed

ANSWERS

Red

1

Use $\sin$. Find x to 1 decimal place.



$$\sin 34^\circ = \frac{x}{9.5}$$

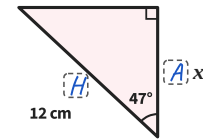
Make the unknown the subject of the formula.

$$x = 9.5 \times \sin 34^\circ$$

$$x = 5.3 \text{ cm}$$

2

Use $\cos$. Find x to 1 decimal place.



$$\cos 47^\circ = \frac{x}{12}$$

Make the unknown the subject of the formula.

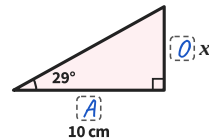
$$x = 12 \times \cos 47^\circ$$

$$x = 8.2 \text{ cm}$$

Amber

5

Pick the ratio. Then find x to 1 decimal place.



$$\tan 29^\circ = \frac{x}{10}$$

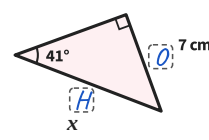
Make the unknown the subject of the formula.

$$x = 10 \times \tan 29^\circ$$

$$x = 5.5 \text{ cm}$$

6

Pick the ratio. Then find x to 1 decimal place.



$$\sin 41^\circ = \frac{x}{7}$$

Make the unknown the subject of the formula.

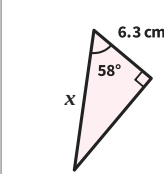
$$x = 7 \div \sin 41^\circ$$

$$x = 10.7 \text{ cm}$$

Green

9

Find x to 1 decimal place.



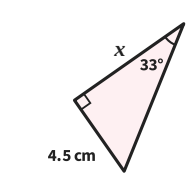
$$\cos 58^\circ = \frac{6.3}{x}$$

$$x = 6.3 \div \cos 58^\circ$$

$$x = 11.9 \text{ cm}$$

10

Find x to 1 decimal place.



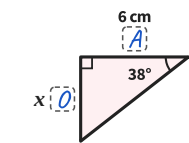
$$\tan 33^\circ = \frac{4.5}{x}$$

$$x = 4.5 \div \tan 33^\circ$$

$$x = 6.9 \text{ cm}$$

3

Use $\tan$. Find x to 1 decimal place.



$$\tan 38^\circ = \frac{x}{6}$$

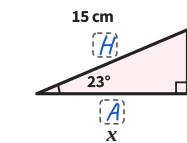
Make the unknown the subject of the formula.

$$x = 6 \times \tan 38^\circ$$

$$x = 4.7 \text{ cm}$$

4

Use $\cos$. Find x to 1 decimal place.



$$\cos 23^\circ = \frac{x}{15}$$

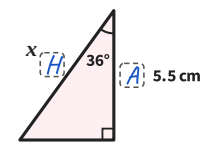
Make the unknown the subject of the formula.

$$x = 15 \times \cos 23^\circ$$

$$x = 13.8 \text{ cm}$$

7

Pick the ratio. Then find x to 1 decimal place.



$$\cos 36^\circ = \frac{5.5}{x}$$

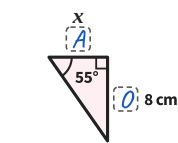
Make the unknown the subject of the formula.

$$x = 5.5 \div \cos 36^\circ$$

$$x = 6.8 \text{ cm}$$

8

Pick the ratio. Then find x to 1 decimal place.



$$\tan 55^\circ = \frac{x}{8}$$

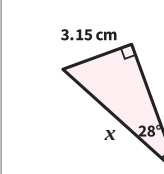
Make the unknown the subject of the formula.

$$x = 8 \times \tan 55^\circ$$

$$x = 5.6 \text{ cm}$$

11

Find x to 1 decimal place.



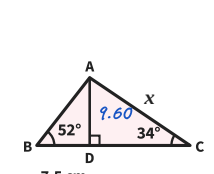
$$\sin 28^\circ = \frac{3.15}{x}$$

$$x = 3.15 \div \sin 28^\circ$$

$$x = 6.7 \text{ cm}$$

12

Find AD first. Then find x to 1 decimal place.



$$AD = 7.5 \times \tan 52^\circ = 9.60$$

$$x = 9.60 \div \sin 34^\circ$$

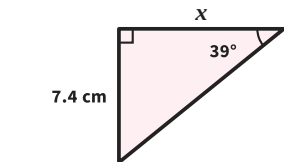
$$x = 17.2 \text{ cm}$$

Trigonometry: Missing Sides, Mixed further practice

ANSWERS

13

Find x to 1 decimal place.



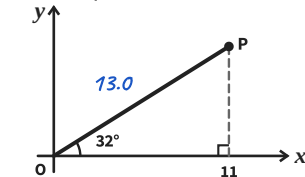
$$\tan 39^\circ = \frac{7.4}{x}$$

$$x = 7.4 \div \tan 39^\circ$$

$$x = 9.1 \text{ cm}$$

14

P is on a straight line from the origin O at 32° to the x axis. The x coordinate of P is 11. Find the length OP to 1 decimal place.



$$\cos 32^\circ = \frac{11}{x}$$

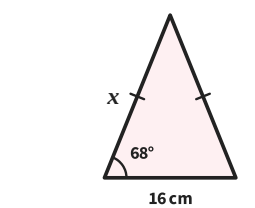
$$x = 11 \div \cos 32^\circ$$

$$OP = 13.0$$

15

The triangle is isosceles.

Find the length x to 1 decimal place.



$$\text{half the base} = 8 \text{ cm}$$

$$x = 8 \div \cos 68^\circ$$

$$x = 21.4 \text{ cm}$$

16

A zip wire runs in a straight line from the top of a 9 m tower down to the ground. It makes an angle of 14° with the level ground. How long is the zip wire? Give your answer to 1 decimal place.

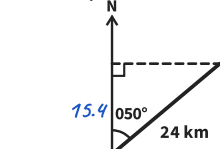
$$\sin 14^\circ = \frac{9}{x}$$

$$x = 9 \div \sin 14^\circ$$

$$\text{Answer } 37.2 \text{ m}$$

17

A boat sails 24 km in a straight line from a harbour on a bearing of 050° . How far north of the harbour is the boat? Give your answer to 1 decimal place.



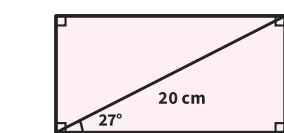
$$\cos 50^\circ = \frac{x}{24}$$

$$x = 24 \times \cos 50^\circ$$

$$\text{Answer } 15.4 \text{ km}$$

18

The diagonal of this rectangle is 20 cm long. It makes an angle of 27° with the longer side. Find the perimeter of the rectangle to 1 decimal place.



$$20 \times \cos 27^\circ = 17.82$$

$$20 \times \sin 27^\circ = 9.08$$

$$\text{Perimeter} = 53.8 \text{ cm}$$

19

A tent pole stands upright and is 1.6 m tall. A straight rope goes from the top of the pole to a peg in the level ground. The rope makes an angle of 38° with the ground. Is a rope 2.5 m long enough? Show how you know.

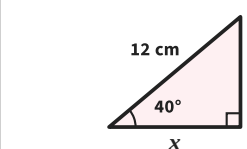
$$\sin 38^\circ = \frac{1.6}{x}$$

$$x = 1.6 \div \sin 38^\circ = 2.60$$

$$\text{Answer } \text{No: it needs } 2.60 \text{ m}$$

20

Sam writes $\tan 40^\circ = \frac{x}{12}$, so $x = 10.1$ cm. Explain what Sam has done wrong. Then find x to 1 decimal place.



$$12 \text{ cm is } H \text{ and } x \text{ is } A: \text{ use } \cos$$

$$x = 12 \times \cos 40^\circ$$

$$x = 9.2 \text{ cm}$$