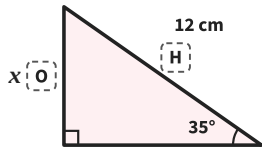


Trigonometry: Finding a Side

1 Label only the two sides you use.

Find x to 1 decimal place.



SOH CAH TOA

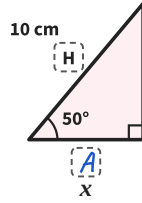
$$\sin 35^\circ = \frac{x}{12}$$

Make the unknown the subject of the formula.

$$x = 12 \times \sin 35^\circ$$

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

2 Find x to 1 decimal place.



SOH CAH TOA

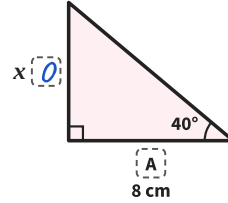
$$\cos 50^\circ = \frac{x}{10}$$

Make the unknown the subject of the formula.

$$x = 10 \times \cos 50^\circ$$

$$x = 6.4 \text{ cm}$$

3 Find x to 1 decimal place.



SOH CAH TOA

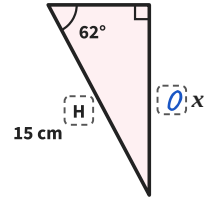
$$\tan 40^\circ = \frac{x}{8}$$

Make the unknown the subject of the formula.

$$x = 8 \times \tan 40^\circ$$

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

4 Find x to 1 decimal place.



SOH CAH TOA

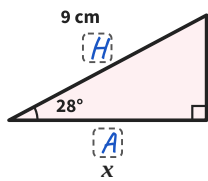
$$\sin 62^\circ = \frac{x}{15}$$

Make the unknown the subject of the formula.

$$x = 15 \times \sin 62^\circ$$

$$x = 13.2 \text{ cm}$$

5 Find x to 1 decimal place.



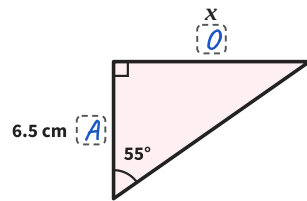
$$\cos 28^\circ = \frac{x}{9}$$

Make the unknown the subject of the formula.

$$x = 9 \times \cos 28^\circ$$

$$x = 7.9 \text{ cm}$$

6 Find x to 1 decimal place.



$$\tan 55^\circ = \frac{x}{6.5}$$

Make the unknown the subject of the formula.

$$x = 6.5 \times \tan 55^\circ$$

$$x = 9.3 \text{ cm}$$

7 A ramp is 4 m long and makes an angle of 12° with the ground. How high does it rise? Give your answer to 2 decimal places.

$$4 \times \sin 12^\circ$$

$$\text{Answer } 0.83 \text{ m}$$

8 Sam stands on level ground 30 m from the foot of a tree. The angle from the ground up to the top of the tree is 35° . How tall is the tree? Give your answer to 1 decimal place.

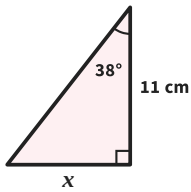
$$30 \times \tan 35^\circ$$

$$\text{Answer } 21.0 \text{ m}$$

Trigonometry: Finding a Side *further practice*

9

Find x to 1 decimal place.



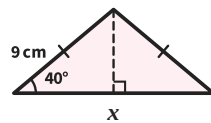
$$\cos 38^\circ = \frac{x}{11}$$

$$x = 11 \times \cos 38^\circ$$

$$x = 8.6 \text{ cm}$$

10

The triangle is isosceles. Find the length of its base, x , to 1 decimal place.



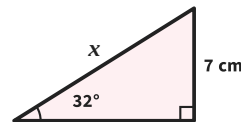
$$\text{half the base} = 9 \times \cos 40^\circ = 6.894$$

$$x = 2 \times 6.894$$

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

11

Find x to 1 decimal place.



$$\sin 32^\circ = \frac{7}{x}$$

$$x = 7 \div \sin 32^\circ$$

$$x = 13.2 \text{ cm}$$

12

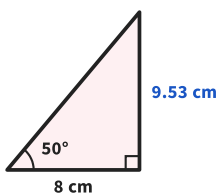
After take off, a plane climbs in a straight line at 14° to the level ground. How high is it when it has flown 3 km? Give your answer to the nearest metre.

$$3 \times \sin 14^\circ = 0.7258 \text{ km}$$

$$\text{Answer } 726 \text{ m}$$

13

Find the area of the triangle to 1 decimal place.



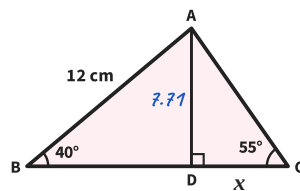
$$\text{height} = 8 \times \tan 50^\circ = 9.534$$

$$8 \times 9.534 \div 2$$

$$\text{Area } 38.1 \text{ cm}^2$$

14

Find the length x to 1 decimal place.



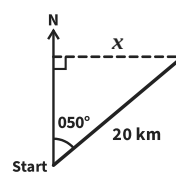
$$AD = 12 \times \sin 40^\circ = 7.713$$

$$x = 7.713 \div \tan 55^\circ$$

$$x = 5.4 \text{ cm}$$

15

A boat sails 20 km on a bearing of 050° . How far east of its start is it? Give your answer to 1 decimal place.



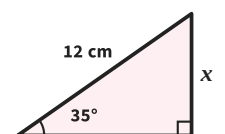
$$\sin 50^\circ = \frac{x}{20}$$

$$x = 20 \times \sin 50^\circ$$

$$x = 15.3 \text{ km}$$

16

Lily says $x = 12 \times \tan 35^\circ$. Is Lily right? Explain, then find x to 1 decimal place.



No: 12 cm is the hypotenuse, use $\sin$

$$x = 12 \times \sin 35^\circ$$

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