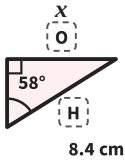


Trigonometry: Finding a Side with Sine

ANSWERS

1

Find x to 1 decimal place.



$$\sin 58^\circ = \frac{x}{8.4}$$

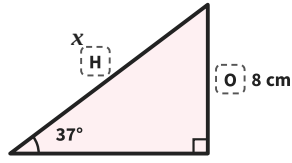
Make the unknown the subject of the formula.

$$x = 8.4 \times \sin 58^\circ$$

$$x = 7.1 \text{ cm}$$

2

Find x to 1 decimal place.



$$\sin 37^\circ = \frac{8}{x}$$

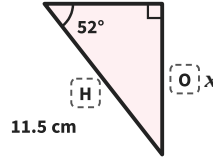
Make the unknown the subject of the formula.

$$x = 8 \div \sin 37^\circ$$

$$x = 13.3 \text{ cm}$$

3

Find x to 1 decimal place.



$$\sin 52^\circ = \frac{x}{11.5}$$

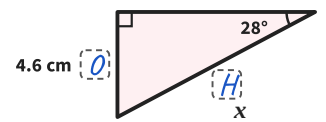
Make the unknown the subject of the formula.

$$x = 11.5 \times \sin 52^\circ$$

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

4

Label O and H, then find x to 1 decimal place.



$$\sin 28^\circ = \frac{4.6}{x}$$

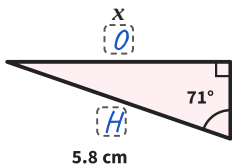
Make the unknown the subject of the formula.

$$x = 4.6 \div \sin 28^\circ$$

$$x = 9.8 \text{ cm}$$

5

Label O and H, then find x to 1 decimal place.



$$\sin 71^\circ = \frac{x}{5.8}$$

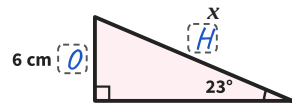
Make the unknown the subject of the formula.

$$x = 5.8 \times \sin 71^\circ$$

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

6

Label O and H, then find x to 1 decimal place.



$$\sin 23^\circ = \frac{6}{x}$$

Make the unknown the subject of the formula.

$$x = 6 \div \sin 23^\circ$$

$$x = 15.4 \text{ cm}$$

7

A straight escalator is 14.5 m long from bottom to top. It slopes at 31° to the floor. How much higher is the top than the bottom? Give your answer to 1 decimal place.

$$\sin 31^\circ = \frac{x}{14.5}$$

$$x = 14.5 \times \sin 31^\circ$$

$$\text{Answer } 7.5 \text{ m}$$

8

Part of a swimming pool floor slopes down in a straight line at 6° to the horizontal. Along this part the depth increases by 1.2 m. How long is the sloping part of the floor? Give your answer to 2 decimal places.

$$\sin 6^\circ = \frac{1.2}{x}$$

$$x = 1.2 \div \sin 6^\circ$$

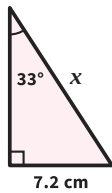
$$\text{Answer } 11.48 \text{ m}$$

Trigonometry: Finding a Side with Sine *further practice*

ANSWERS

9

Find x to 1 decimal place.



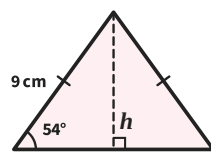
$$\sin 33^\circ = \frac{7.2}{x}$$

$$x = 7.2 \div \sin 33^\circ$$

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

10

The triangle is isosceles. Find its height, h , to 1 decimal place.



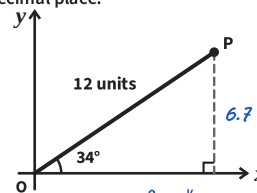
$$\sin 54^\circ = \frac{h}{9}$$

$$h = 9 \times \sin 54^\circ$$

$$h = 7.3 \text{ cm}$$

11

The line OP is 12 units long. It makes an angle of 34° with the x axis. Find the y coordinate of P, to 1 decimal place.



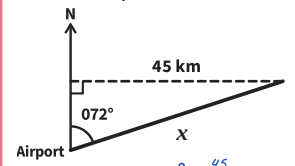
$$\sin 34^\circ = \frac{y}{12}$$

$$y = 12 \times \sin 34^\circ$$

$$y = 6.7$$

12

A plane leaves an airport and flies in a straight line on a bearing of 072° . How far has it flown when it is 45 km east of the airport? Give your answer to 1 decimal place.



$$\sin 72^\circ = \frac{45}{x}$$

$$x = 45 \div \sin 72^\circ$$

$$x = 47.3 \text{ km}$$

13

A wheelchair ramp must rise 0.45 m. Its slope can be no steeper than 4.8° to the level ground. Find the shortest length the sloping surface of the ramp can be, to 1 decimal place.

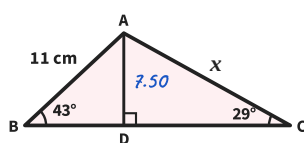
$$\sin 4.8^\circ = \frac{0.45}{x}$$

$$x = 0.45 \div \sin 4.8^\circ = 5.378$$

$$\text{Answer } 5.4 \text{ m}$$

14

Find the length x to 1 decimal place.



$$AD = 11 \times \sin 43^\circ = 7.502$$

$$x = 7.502 \div \sin 29^\circ$$

$$x = 15.5 \text{ cm}$$

15

Ella flies a kite on a straight string 30 m long at 52° to the level ground. Ben's straight string is 35 m long at 41° . Both hold their string at the same height. Whose kite is higher, and by how much? Give your answer to 1 decimal place.

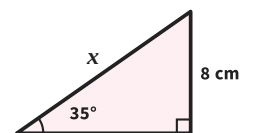
$$\text{Ella: } 30 \times \sin 52^\circ = 23.64$$

$$\text{Ben: } 35 \times \sin 41^\circ = 22.96$$

$$\text{Answer } \text{Ella's, by } 0.7 \text{ m}$$

16

Sam writes $\sin 35^\circ = \frac{8}{x}$, so $x = 8 \times \sin 35^\circ = 4.6 \text{ cm}$. Explain how you know Sam is wrong. Then find x to 1 decimal place.



$$x \text{ is the hypotenuse: more than } 8 \text{ cm}$$

$$x \text{ on the bottom: } x = 8 \div \sin 35^\circ$$

$$x = 13.9 \text{ cm}$$