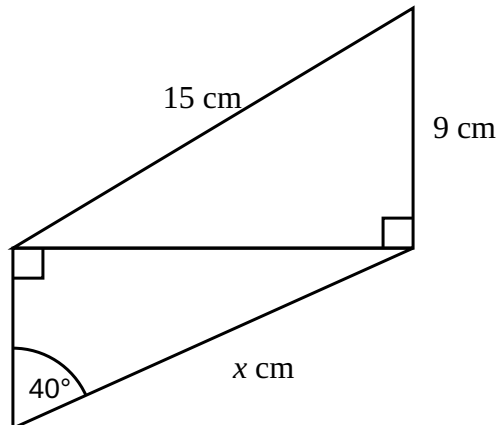


GEOMETRY: PYTHAGORAS & TRIGONOMETRY**I Do****Best Guess Mastery Worksheet (Target Grade 5/6)**

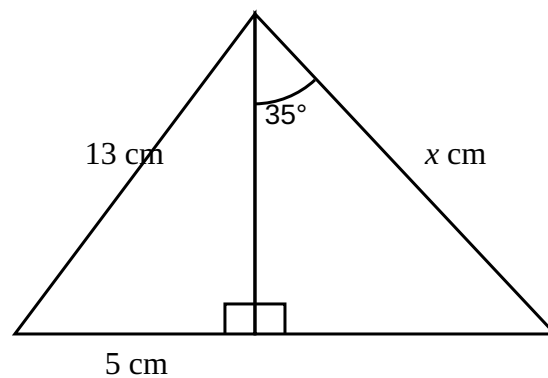
Work out the value of x .

Give your answer to 1 decimal place.

 $x =$ **We Do**

Work out the value of x .

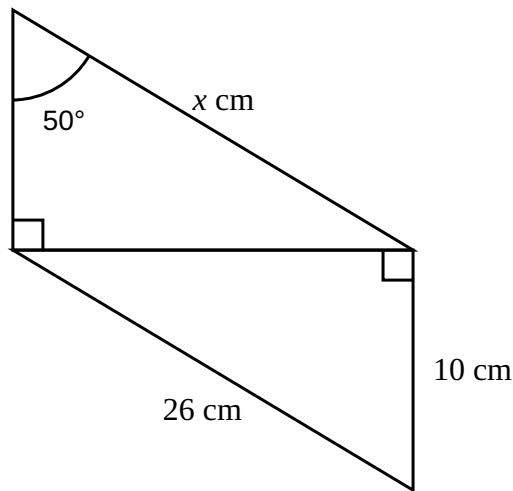
Give your answer to 1 decimal place.

 $x =$

GEOMETRY: PYTHAGORAS & TRIGONOMETRY**You Do 1****Best Guess Mastery Worksheet (Target Grade 5/6)**

Work out the value of x .

Give your answer to 1 decimal place.

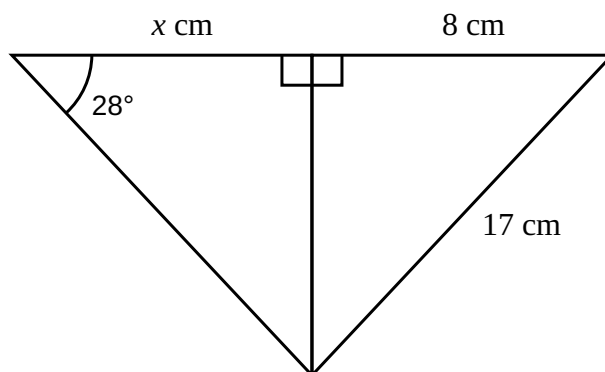


$x =$

You Do 2

Work out the value of x .

Give your answer to 1 decimal place.

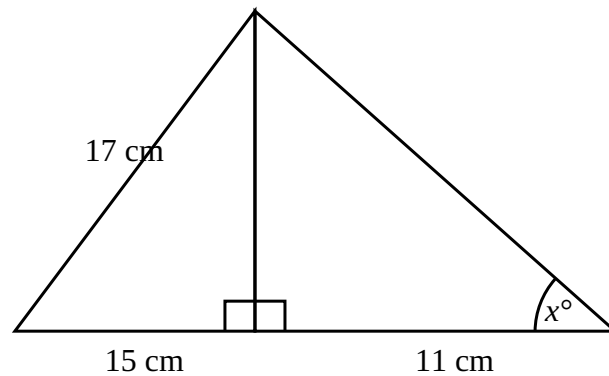


$x =$

GEOMETRY: PYTHAGORAS & TRIGONOMETRY**Challenge 1****Best Guess Mastery Worksheet (Target Grade 5/6)**

Work out the value of the angle marked x .

Give your answer to 1 decimal place.



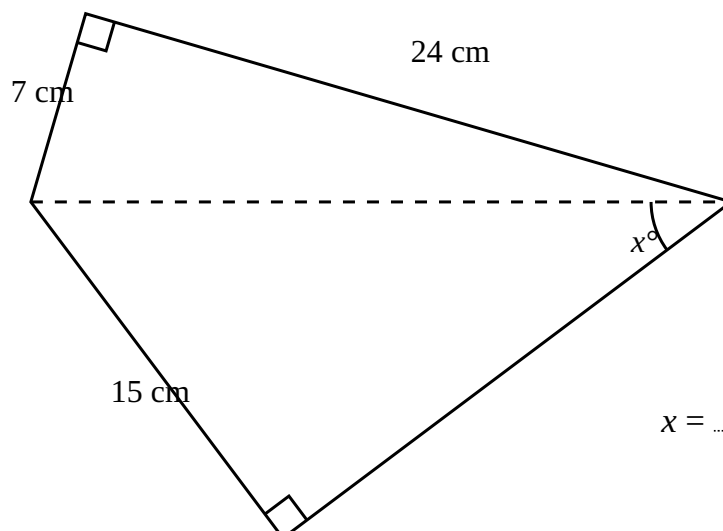
$x =$

Challenge 2

Two right-angled triangles share a common hypotenuse.

Work out the value of the angle marked x .

Give your answer to 1 decimal place.



$x =$

Answers & Worked Solutions

I Do:

1. Find the shared horizontal base using Pythagoras in the top triangle:

$$\text{Base}^2 = 15^2 - 9^2 = 225 - 81 = 144. \text{ Base} = \sqrt{144} = 12 \text{ cm.}$$

2. Use Trigonometry (SOHCAHTOA) in the bottom triangle to find hypotenuse x :

The shared base is opposite to the 40° angle.

$$\sin(40^\circ) = 12 / x \rightarrow x = 12 / \sin(40^\circ) \approx 18.668... \rightarrow \mathbf{18.7}$$

We Do:

1. Find the shared vertical height using Pythagoras in the left triangle:

$$\text{Height}^2 = 13^2 - 5^2 = 169 - 25 = 144. \text{ Height} = \sqrt{144} = 12 \text{ cm.}$$

2. Use Trigonometry in the right triangle to find hypotenuse x :

The shared height is adjacent to the 35° angle.

$$\cos(35^\circ) = 12 / x \rightarrow x = 12 / \cos(35^\circ) \approx 14.649... \rightarrow \mathbf{14.6}$$

You Do 1:

1. Find the shared horizontal base using Pythagoras in the bottom triangle:

$$\text{Base}^2 = 26^2 - 10^2 = 676 - 100 = 576. \text{ Base} = \sqrt{576} = 24 \text{ cm.}$$

2. Use Trigonometry in the top triangle to find hypotenuse x :

The shared base is opposite to the 50° angle.

$$\sin(50^\circ) = 24 / x \rightarrow x = 24 / \sin(50^\circ) \approx 31.330... \rightarrow \mathbf{31.3}$$

You Do 2:

1. Find the shared vertical height using Pythagoras in the right triangle:

$$\text{Height}^2 = 17^2 - 8^2 = 289 - 64 = 225. \text{ Height} = \sqrt{225} = 15 \text{ cm.}$$

2. Use Trigonometry in the left triangle to find the adjacent base x :

The shared height is opposite the 28° angle.

$$\tan(28^\circ) = 15 / x \rightarrow x = 15 / \tan(28^\circ) \approx 28.210... \rightarrow \mathbf{28.2}$$

Challenge 1:

1. Find the shared vertical height using Pythagoras in the left triangle:

$$\text{Height}^2 = 17^2 - 15^2 = 289 - 225 = 64. \text{ Height} = \sqrt{64} = 8 \text{ cm.}$$

2. Use inverse Trigonometry in the right triangle to find the angle x :

We have the opposite (8) and adjacent (11) sides.

$$\tan(x) = 8 / 11 \rightarrow x = \tan^{-1}(8/11) \approx 36.027... \rightarrow \mathbf{36.0}$$

Challenge 2:

1. Find the shared hypotenuse (dashed line) using Pythagoras in the top triangle:

$$\text{Hypotenuse}^2 = 7^2 + 24^2 = 49 + 576 = 625. \text{ Hypotenuse} = \sqrt{625} = 25 \text{ cm.}$$

2. Use inverse Trigonometry in the bottom triangle to find the angle x :

We have the opposite (15) and hypotenuse (25) sides.

$$\sin(x) = 15 / 25 = 0.6 \rightarrow x = \sin^{-1}(0.6) \approx 36.869... \rightarrow \mathbf{36.9}$$