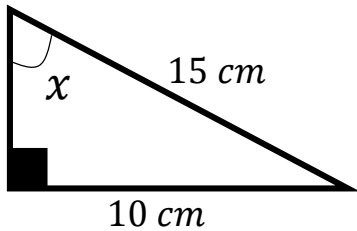# Timester Challenge
Trigonometry – Missing Angle
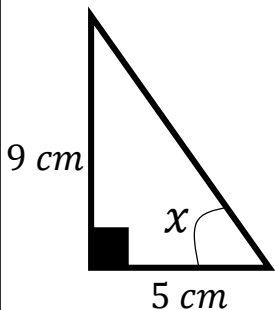
Work out the size of the anlge marked x.
Give your answer correct to 1 decimal place.
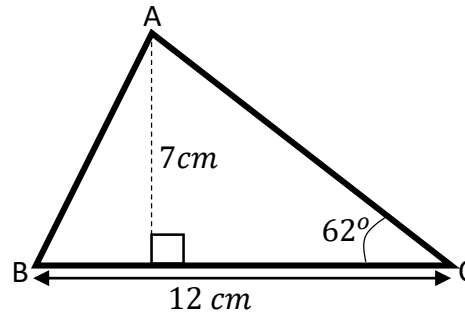
15 cm

x

10 cm

Bronze ⭐

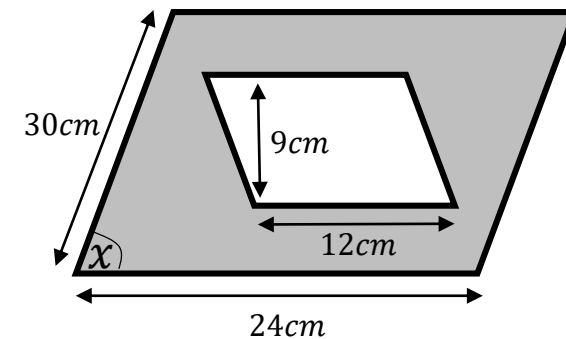Work out the size of angle x.
Give your answer correct to 3 significant figures.

9 cm

x

5 cm

Bronze ⭐

Calculate the size of the angle ABC.
Give your answer correct to 1 decimal place.

A

7cm

62°

B

12 cm

C

Silver ⭐

A pattern is made from two similar parallelograms.
Work out the size of angle x.

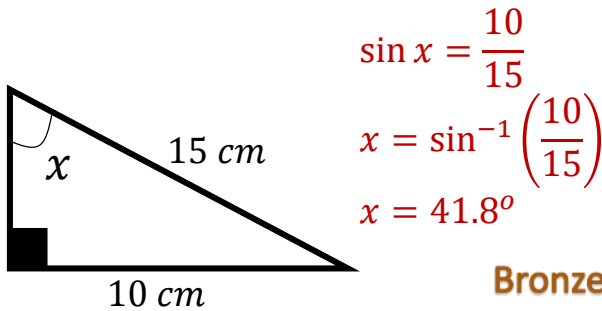30cm

9cm

12cm

x

24cm

Gold ⭐

Timester Challenge
Trigonometry – Missing Angle
Answers

Work out the size of the anlge marked x.
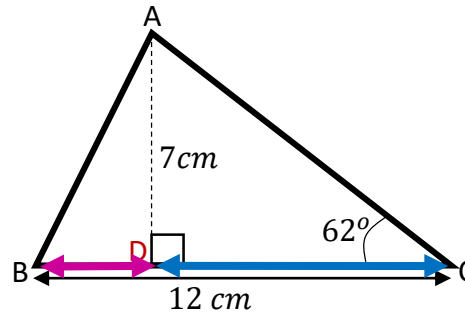Give your answer correct to 1 decimal place.

$$\sin x = \frac{10}{15}$$

$$x = \sin^{-1}\left(\frac{10}{15}\right)$$

$$x = 41.8^o$$

15 cm

10 cm

Bronze ⭐

Work out the size of angle x.
Give your answer correct to 3 significant figures.

$$\tan x = \frac{9}{5}$$

$$x = \tan^{-1}\left(\frac{9}{5}\right)$$

$$x = 60.9^o$$

9 cm

5 cm

Bronze ⭐

Calculate the size of the angle ABC.
Give your answer correct to 1 decimal place.

A

7cm

62⁰

B   12 cm   C
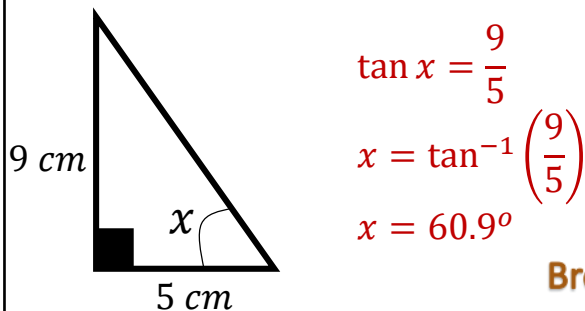
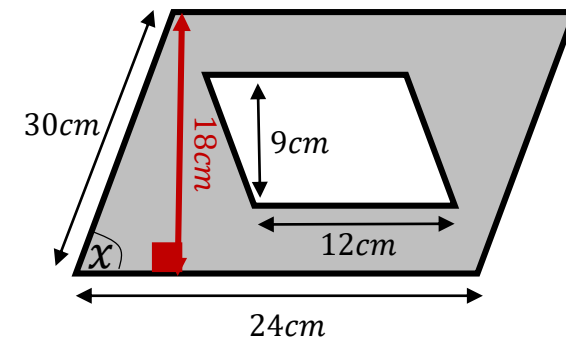$$DC = \frac{7}{\tan 62} = 3.721966 \ldots$$

$$BD = 12 - 3.721966 \ldots = 8.2780 \ldots$$

$$ABC = \tan^{-1}\left(\frac{7}{8.2780 \ldots}\right)$$

$$ABC = 40.2^o$$

Silver ⭐

A pattern is made from two similar parallelograms.
Work out the size of angle x.

30cm   18cm   9cm

12cm

x

24cm

$$\text{Scale factor} = \frac{24}{12} = 2$$

$$\text{Perpendicular Height} = 9 \times 2 = 18cm$$

$$\sin x = \frac{18}{30}$$

$$x = \sin^{-1}\left(\frac{18}{30}\right)$$

$$x = 36.87^o$$

Gold ⭐