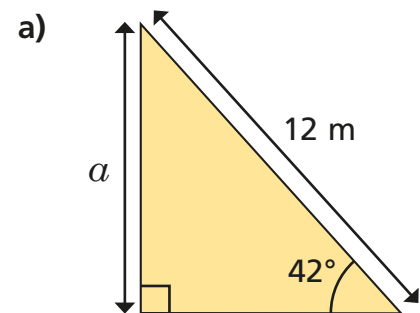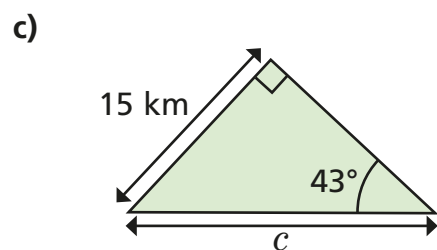## Use the sine and cosine ratio to find missing side lengths
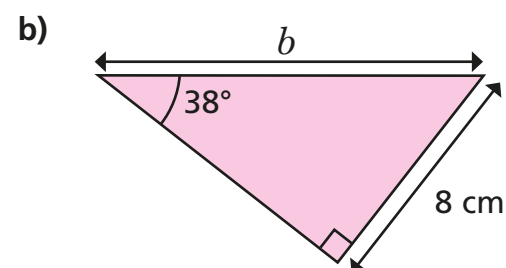
1 Use the sine ratio to find the unknown lengths.

Give your answers to 1 decimal place.
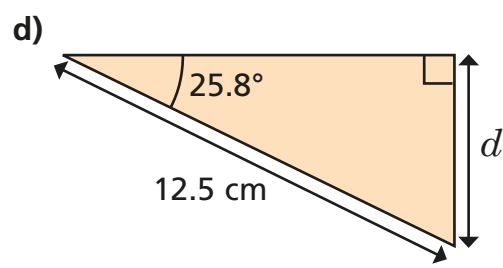
a)

12 m

a

42°

$a =$ ⬚ m

c)

15 km

43°

c

$c =$ ⬚ km

b)

b

38°

8 cm

$b =$ ⬚ cm

d)

25.8°

12.5 cm

d

$d =$ ⬚ cm

2 Use the cosine ratio to find the unknown lengths.

Give your answers to 1 decimal place.

a)

e 18°

5.6 m

$e =$ ⬚ m

b)

12.4 cm

53.4°

f

$f =$ ⬚ cm

c)

26°   5.8 mm

g

$g =$ ⬚ mm

d)

2.7 km

72°

h
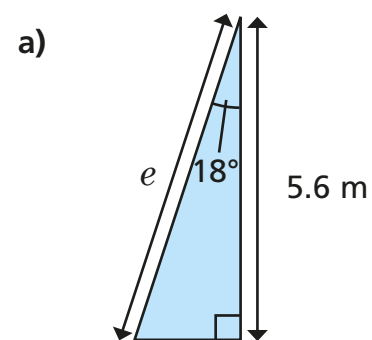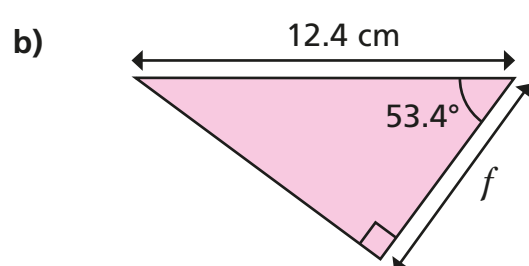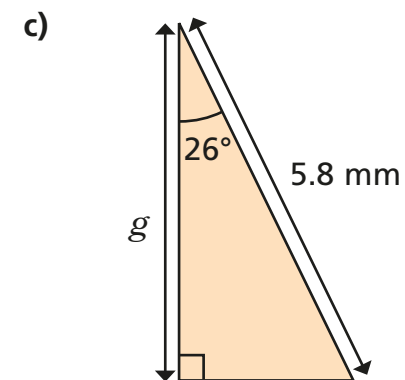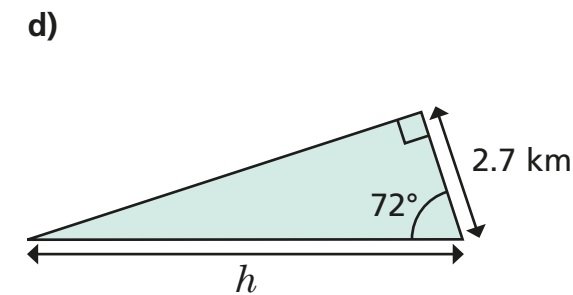
$h =$ ⬚ km

3 Mo and Dora are calculating the length of the side labelled x.

11 cm

x

38°
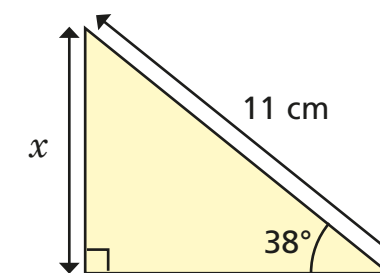
Mo says, "We should use $\sin 38° = \dfrac{x}{11}$"

Dora says, "We should use $\sin 38° = \dfrac{11}{x}$"
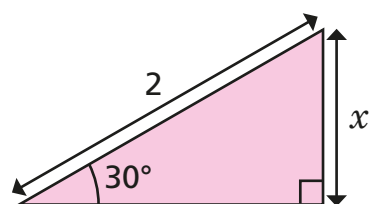
a) Who do you agree with? _____

Give reasons for your answer.

_____

_____

b) Work out the length of the side labelled x.
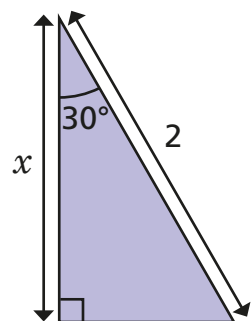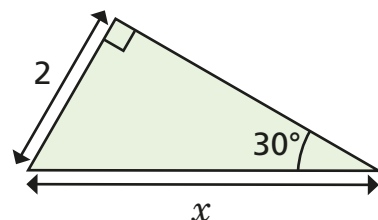
$x =$ ⬚ cm

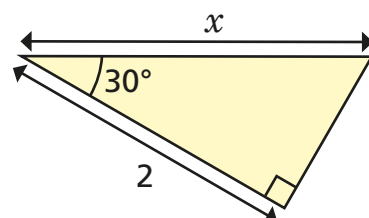**4** Match the diagrams to the equations.

$$\sin 30 = \frac{x}{2}$$
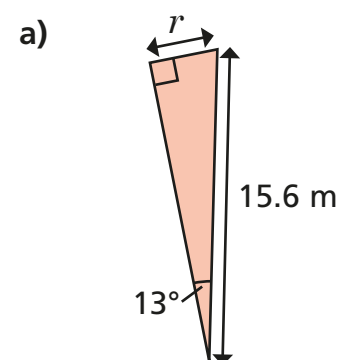
$$\cos 30 = \frac{2}{x}$$
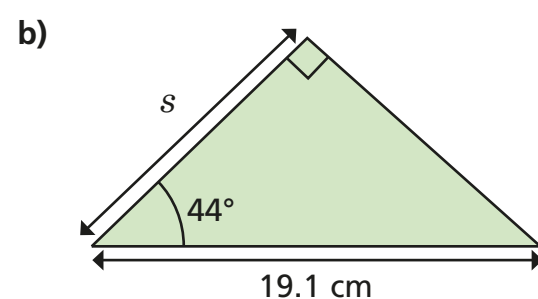
$$\sin 30 = \frac{2}{x}$$

$$\cos 30 = \frac{x}{2}$$

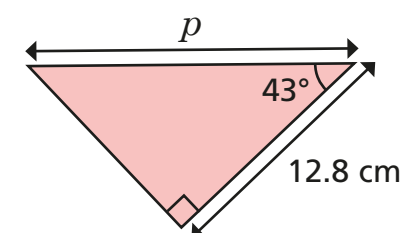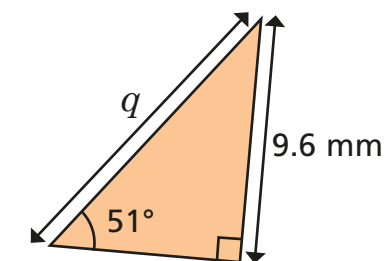**5** Work out the unknown lengths.
Give your answers to 1 decimal place.

a)

15.6 m

13°

b)

s

44°

19.1 cm

$r =$ ☐ m

$s =$ ☐ cm

c)

p

43°

12.8 cm

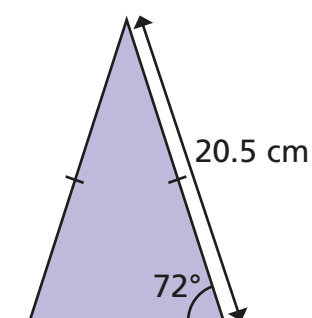$p =$ ☐ cm

d)

q

9.6 mm

51°

$q =$ ☐ mm

6 Find the height of the triangle.
Give your answer to 1 decimal place.

20.5 cm

72°

☐

7 Find the length of PQ.
Give your answer to 2 decimal places.

Q

P

20°

47°

R

14 cm

S

☐

White Rose Maths