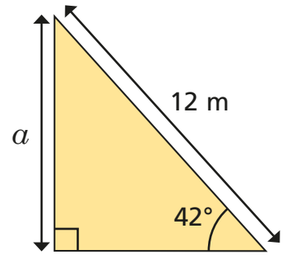
Use the sine and cosine ratio to find missing side lengths

1 Use the sine ratio to find the unknown lengths.

Give your answers to 1 decimal place.

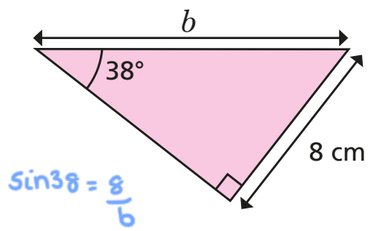
a)



sin42 = a/12

$a =$ 8·0 m

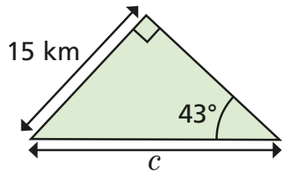
b)



sin38 = 8/b

$b =$ 13·0 cm

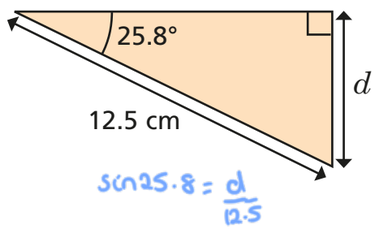
c)



sin43 = 15/c

$c =$ 22·0 km

d)



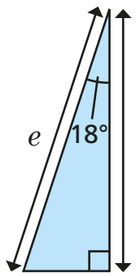
sin25·8 = d/12·5

$d =$ 5·4 cm

2 Use the cosine ratio to find the unknown lengths.

Give your answers to 1 decimal place.

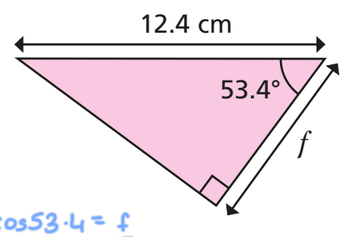
a)



cos18 = 5·6/e

$e =$ 5·9 m

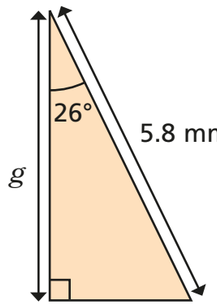
b)



cos53·4 = f/12·4

$f =$ 7·4 cm

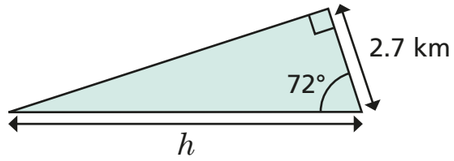
c)



cos26 = g/5·8

$g =$ 5·2 mm

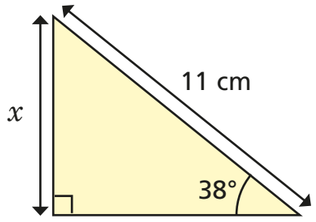
d)



cos72 = 2·7/h

$h =$ 8·7 km

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



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

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

a) Who do you agree with? Mo

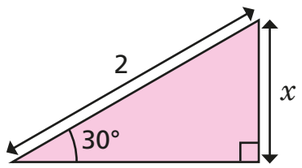
Give reasons for your answer.

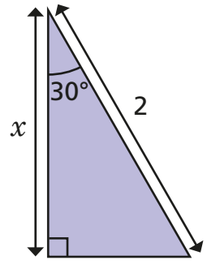
sinθ = O/H not H/O

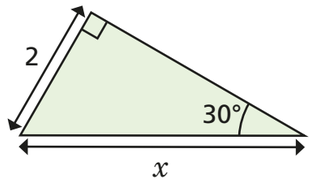
b) Work out the length of the side labelled x.

$x =$ 6·77 cm

4 Match the diagrams to the equations.







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

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

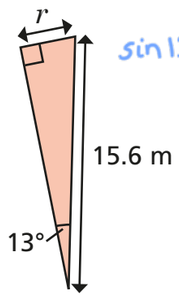
$\sin 30 = \frac{2}{x}$

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

5 Work out the unknown lengths.

Give your answers to 1 decimal place.

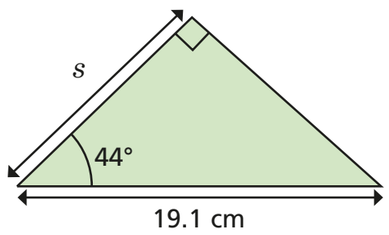
a)



$\sin 13 = \frac{r}{15.6}$

$r =$ 3.5 m

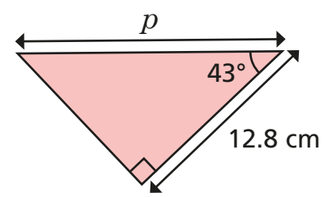
b)



$\cos 44 = \frac{s}{19.1}$

$s =$ 13.7 cm

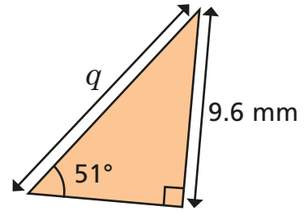
c)



$\cos 43 = \frac{12.8}{p}$

$p =$ 17.5 cm

d)

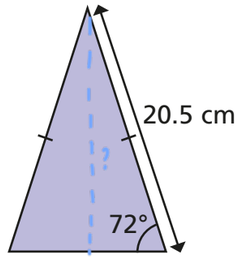


$\sin 51 = \frac{9.6}{q}$

$q =$ 12.4 mm

6 Find the height of the triangle.

Give your answer to 1 decimal place.

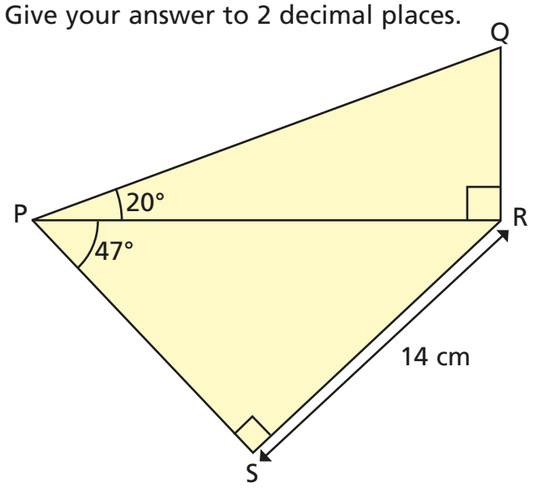


$\sin 72 = \frac{?}{20.5}$

19.5 cm

7 Find the length of PQ.

Give your answer to 2 decimal places.



$\sin 47 = \frac{14}{PR}$

$PR = 19.14258446$

$\cos 20 = \frac{PR}{PQ}$

$PQ = \frac{19.14258446}{\cos 20}$

20.37 cm