

Worded Pythagoras Problems

Starter

1. **(Review of last lesson)** Anna cycles 8 km due east and then 5 km due south. How far is she from her starting point (SP)?
Hint: Draw a diagram to help.
2. **(Review of last lesson)** The hypotenuse of a right-angled triangle is 70 cm. Given that the middle side is twice the length of the shorter side, find the length of the shorter side.

N.B. The symbol \Rightarrow means “implies”.
The symbol with the 3 dots, \therefore , means “therefore”.
Use these symbols to connect the lines of your working.

Notes

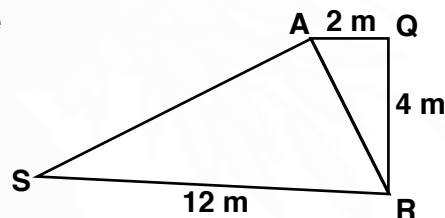
Practical questions will often not include a diagram so it is important you draw a diagram. Highlight the hypotenuse side with ‘hyp’.

N.B. Give your answers to 3 s.f. unless otherwise stated.

E.g. 1 A 5 m ladder stands against a vertical wall. If the foot of the ladder is 1 m away from the point where the wall meets the ground, how high does the ladder reach up the wall?
Hint: Draw a diagram.

Some questions require you to use Pythagoras’ theorem more than once.

E.g. 2 Given that $\angle SAR$ and $\angle AQR$ are right-angles, find the distance AS to 3 s.f..



Video: [Pythagoras in rectangles and isosceles triangles](#)
Video: [Showing a triangle is right-angled](#)

[Solutions to Starter and E.g.s](#)

Exercise

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[Textbook answers \(only available during a lockdown\)](#)