

EXAM TIP:

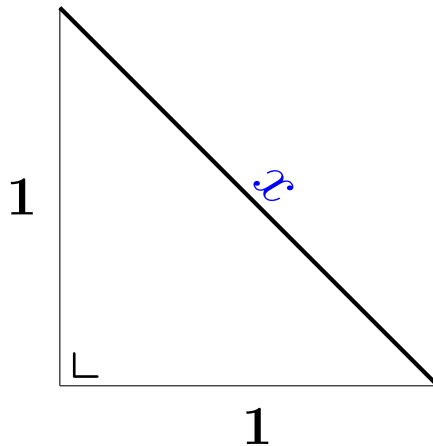
The '*hypotenuse*' is always the longest side, and the side opposite the right angle, only for right-angled triangles! If it's not a right-angled triangle, then it doesn't have a '*hypotenuse*'! If you fail to identify this correctly in the exam you will likely get either little or no marks. This applies for identifying sides '*adjacent*' and '*opposite*', as well, when using sin, cos and tan. If you mess it up you lose marks so double-check this that you got it right in questions! Also you'd probably get a good few marks for writing down the formula for sin, cos and tan, and also '*Pythagoras theorem*' or for some use of these formulae, but you'd probably get nothing if you wrote down "SOHCAHTOA".^{xi} Make sure you write down all these formulae in *all* of the answer boxes, where they could be relevant (not just one), but make sure you write them small so that you leave space to answer the question properly!

1.7 Irrational Numbers

'*Irrational numbers*' are non-repeating, non-terminating decimals. (I.e. never ending and with no repeating pattern.) An irrational number is any number which cannot be expressed as a fraction. Typical examples are ' π ', ' e ', $\sqrt{2}$, $\sqrt{3}$. These are decimals whose decimal places go on forever (non terminating), e.g. $\pi = 3.141592653589\dots$ and $e = 2.718281828459\dots$, and unlike the decimal, $0.08\bar{3}$, which goes on forever, and can be represented as a fraction ($0.08\bar{3} = \frac{1}{12}$), '*irrational numbers*', like ' π ' and ' e ', cannot be represented as fractions.

MANDATORY EXERCISE:

Find the magnitude (size) of the side marked " x ". (easy)



EXAM TIP:

The formula for Pythagoras' theorem can easily be found in your '*Formulae & Tables*' booklet. Take the time to find it now!

^{xi}More on sin, cos, tan, etc. later, in Handout 5!

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