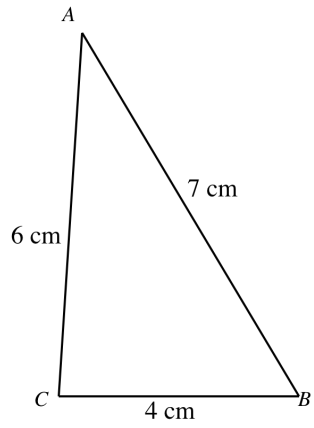
Paper, pencil and protractor: Solutions

http://topdrawer.aamt.edu.au/Geometric-reasoning/Good-teaching/Exploring-congruence/Developing-the-congruence-tests/Paper-pencil-and-protractor

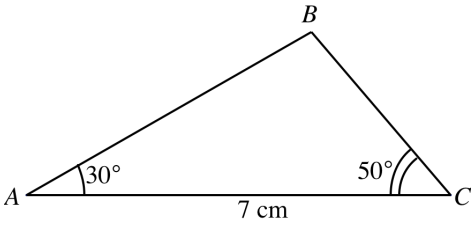
Set A

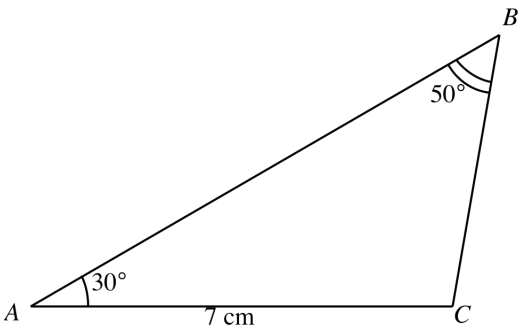
There is only one possible triangle.

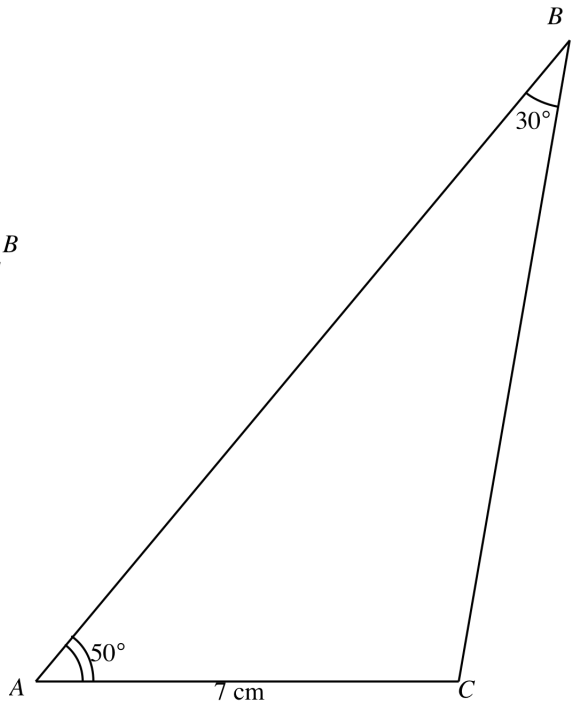


Set B

There are three possible triangles







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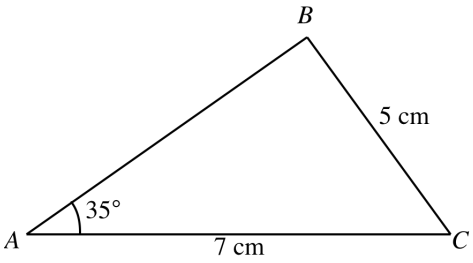
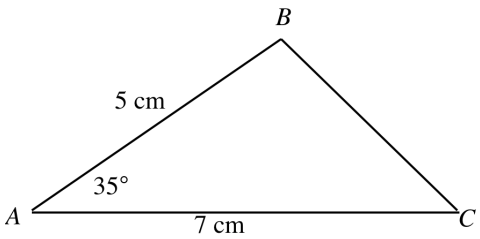
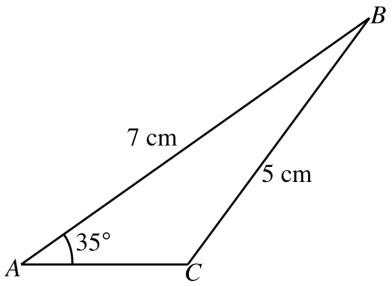
Set C

There are three possible triangles.

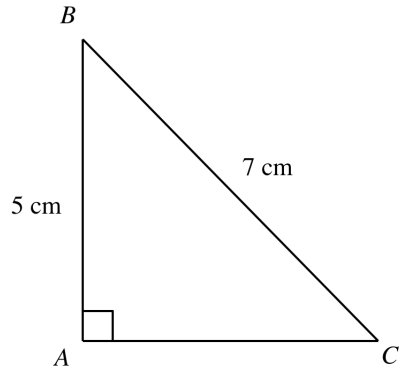


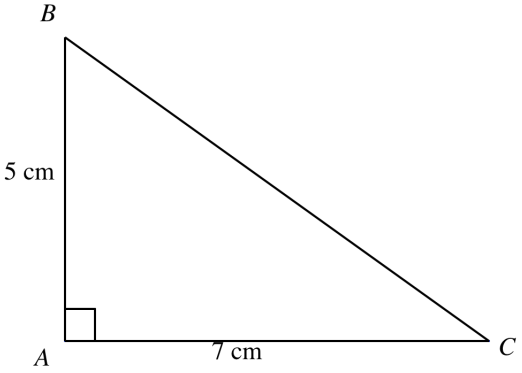




Set D

There are two possible triangles





Explanation

It is only when we add the conditions that in

- SAS the angle is included,
- AAS the side must be matching
- RHS the hypotenuse must be given

that the triangle is unique.

A further discussion question could be: Why in RHS are there only two possible triangles, not three?