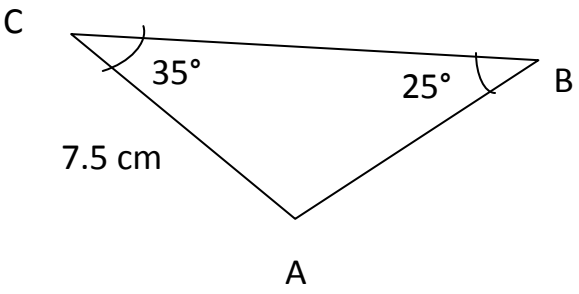
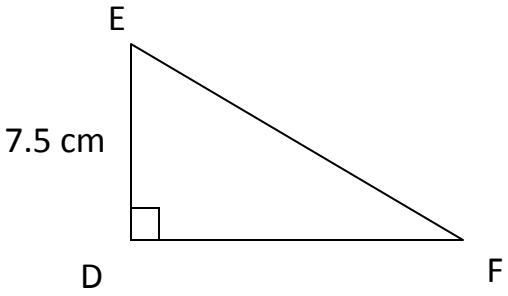
Congruent Triangles

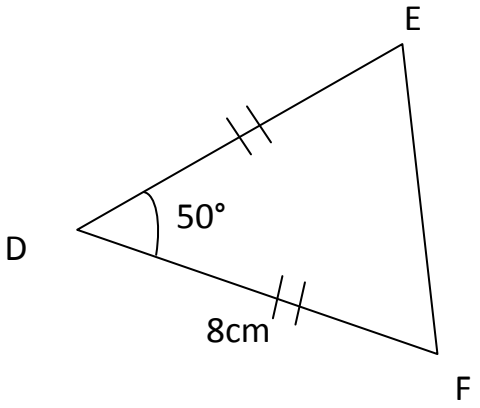
For two triangles to be congruent ALL SIDES must be equal and ALL ANGLES must be equal.

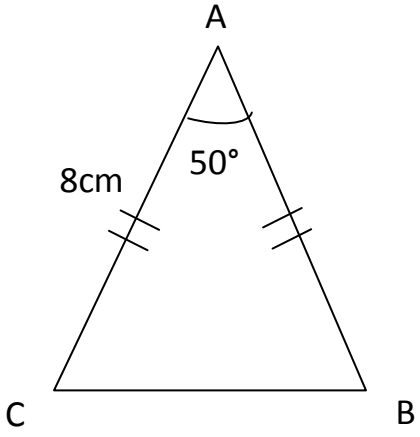
Are these triangles congruent?





What about these?

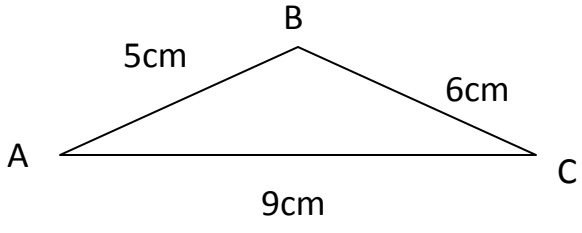


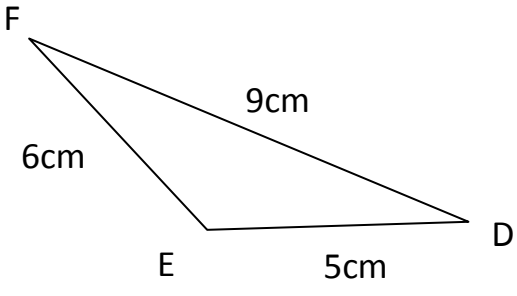


When you are given limited information about any pair of triangles, there are three ways to tell whether or not they are congruent

Theorem 1 – Side Side Side (SSS)

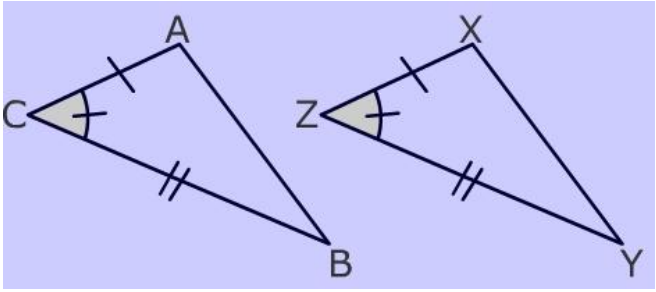
If all 3 sides measure the same in both triangles, they are congruent.





Theorem 2 – Side Angle Side (SAS)

If 2 sides measure the same in both triangles and the angles between those 2 sides is also the same, they are congruent.



*Be careful with the orientation of the triangles – flip them around and re-draw them if necessary. Make sure you are looking at the triangles in the same views.

Theorem 3 – Angle Side Angle (ASA)

If 2 angles measure the same in both triangles and the side between those 2 angles is also the same, they are congruent.