

2.5 Exploring Congruent Triangles

Recall from Grade 9:

Congruent Triangles: triangles that are the same size and the same shape.

In congruent triangles, the following are equal:

- corresponding sides
- corresponding angles

In order for us to conclude that two triangles are congruent, do we need to show that ALL corresponding side and angles are equal, or is it sufficient to just show that some of them are equal?

We don't need to show that all of them are equal. There are some very specific combinations of sides and angles that we can use to prove congruency.

Congruent Triangle Postulates

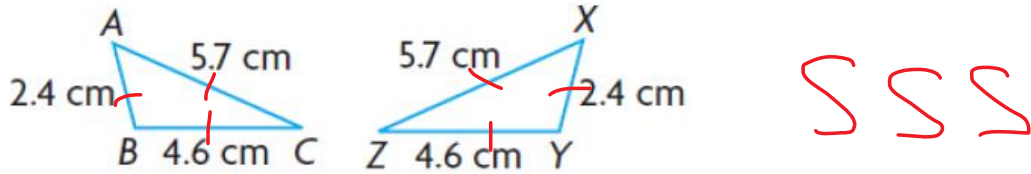
If we can show that any three (3) of the following pieces of information are the same in two triangles, then that is sufficient to prove that the triangles are congruent.

SSS		
ASA		
SAS		
AAS		

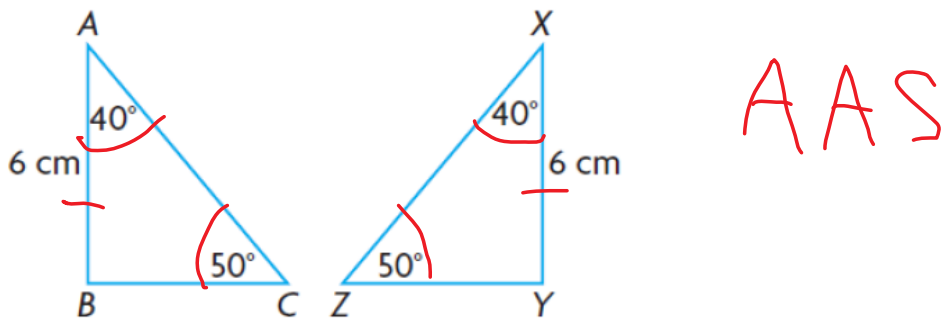
Example 1:

For each pair of triangles, state why it is possible to conclude that $\triangle ABC$ is congruent to $\triangle XYZ$.

(A)



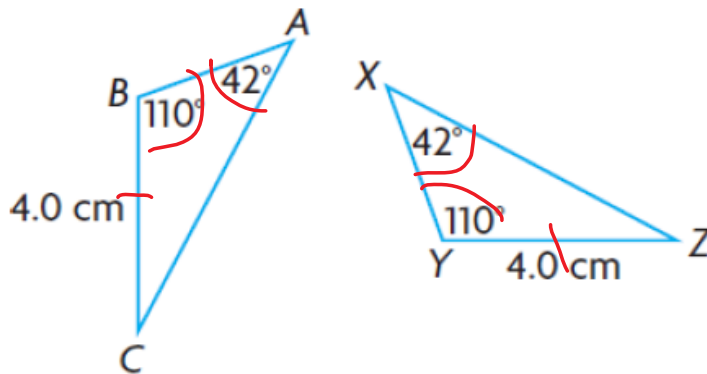
(B)



Example 2:

Is it possible to conclude that $\triangle ABC$ is congruent to $\triangle XYZ$ given only the following information?

Yes. AAS

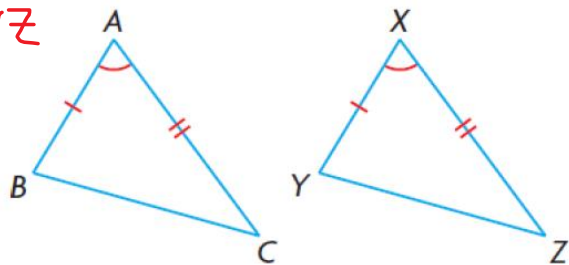


Example 3:

For each pair of congruent triangles, state the corresponding angles and sides, and explain how you know they are equal. Then write the congruent statement.

$\angle A = \angle X$
 $\overline{AB} = \overline{XY}$
 $\overline{AC} = \overline{XZ}$

$\triangle ABC \cong \triangle XYZ$
SAS



Textbook Questions: page 106 #1c, d, 2b, 3b, c, d