**Congruent Triangles**

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

Are these triangles congruent?

7.5 cm

D

E

F

25°

35°

7.5 cm

A

B

C

What about these?

D

E

F

8cm

50°

A

B

C

8cm

50°

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.

A

B

C

D

E

F

5cm

5cm

9cm

6cm

6cm

9cm

**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.

