

Math 9 Unit 3b.1 KEY

3b.1 Guided notes
Math – Wolfe 2020

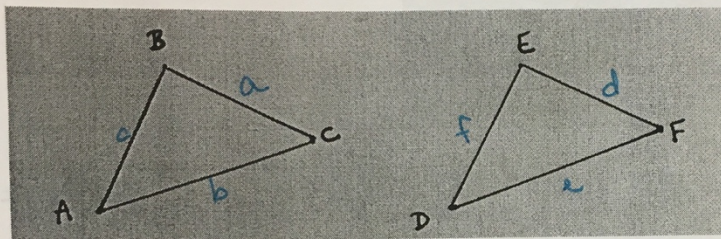
Name: Key

Congruent and similar triangles

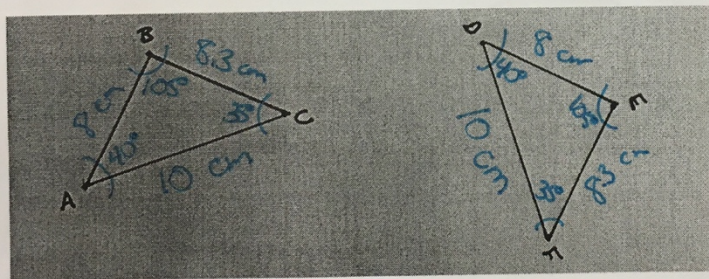
Just like numbers that are the same are equal, shapes that are exactly the same are **congruent**.

Congruent figures have the same Size and the same Shape.

They might look exactly the same:



Or they might look different at first. They can be facing a different way or flipped around, but if you could pick up one figure and lay it perfectly on the other, they are congruent.



(singular; vertex)

If two figures are congruent, we can match up the corners, or vertices. Pairs of angles that match up are called corresponding. We can do the same thing with the sides – each side in the first triangle has a matching side in the second. Corresponding angles and sides are congruent.

$$A = D = 40^\circ$$

$$B = E = 105^\circ$$

$$C = F = 35^\circ$$

$$a = d = 8.3 \text{ cm}$$

$$b = e = 10 \text{ cm}$$

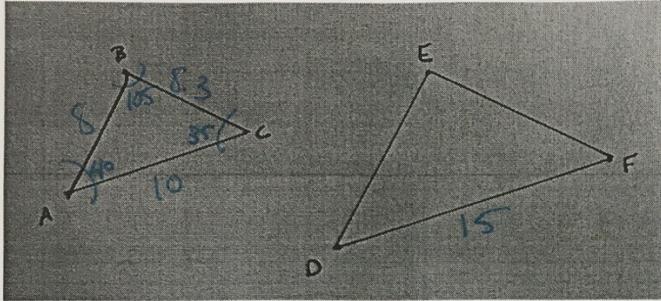
$$c = f = 8 \text{ cm}$$

(d is the side opposite $\neq D$)

180°
total ✓

If two figures are the same Shape but different Size, we call them similar.

Similar triangles still have corresponding angles that are congruent, but obviously the lengths of the sides are different. They do have a relationship, though! Corresponding sides are proportional.



$$A = D = 40^\circ$$

$$a = 8.3 \text{ cm}$$

$$\frac{10}{15} = \frac{8.3}{x}$$

$$d = 12.45 \text{ cm}$$

$$B = E = 105^\circ$$

$$b = 10 \text{ cm}$$

$$e = 15 \text{ cm}$$

$$C = F = 35^\circ$$

$$c = 8 \text{ cm}$$

$$\frac{10}{15} = \frac{8}{x}$$

$$f = 12 \text{ cm}$$