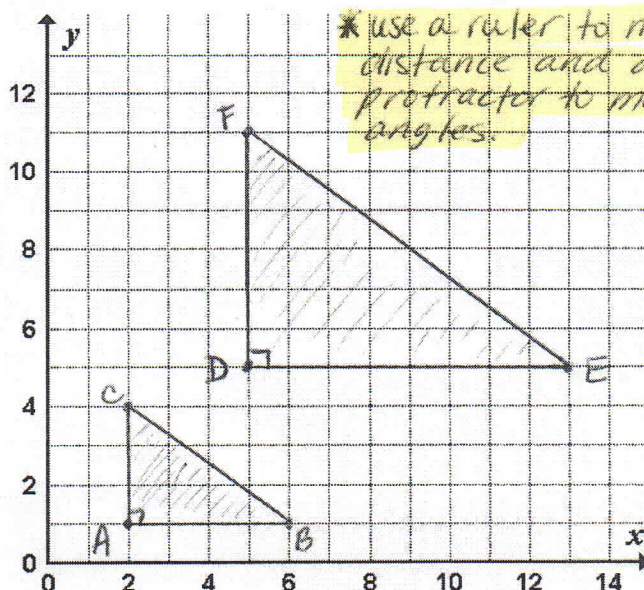


Investigation: Similar Triangles

- Graph the following triangles on the grid shown, labelling each vertex with the correct letter:
 $\triangle ABC$ with $A(2,1)$, $B(6,1)$, and $C(2,4)$
 $\triangle DEF$ with $D(5,5)$, $E(13,5)$, and $F(5,11)$
- Shade each triangle lightly with a pencil so that you can see each clearly.
- In complete sentences, compare $\triangle ABC$ to $\triangle DEF$. How are they the same? How are they different?

Similar: both have right angle
 one is scaled down from the other



Different: $\triangle DEF$ is larger than $\triangle ABC$

- Complete the following chart to show various measurements. (Be **VERY** accurate.)

Remember angles in a $\triangle$ add to 180°

Triangle	Angles	Length of Sides	Ratios of Corresponding Sides
$\triangle ABC$	$\angle A = 90^\circ$	$AB = 2.3$	$\frac{AB}{DE} = \frac{2.3}{4.9} = 0.5$
	$\angle B = 38^\circ$	$BC = 2.8$	$\frac{BC}{EF} = \frac{2.8}{5.6} = 0.5$
	$\angle C = 52^\circ$	$AC = 1.6$	$\frac{AC}{DF} = \frac{1.6}{3.3} = 0.5$
$\triangle DEF$	$\angle D = 90^\circ$	$DE = 4.9$	
	$\angle E = 38^\circ$	$EF = 5.6$	
	$\angle F = 52^\circ$	$DF = 3.3$	

- In complete sentences, compare the Angles, Length of Sides and Ratios of Corresponding Sides of the two triangles. How are they the same/different?

- The angles of corresponding vertices are the same
- Lengths of sides are not the same ... but ...
- RATIOS of corresponding side lengths are the same

Conclusion:

$\triangle ABC$ and $\triangle DEF$ are called similar. When triangles are similar, it means:

- the ratios of the lengths of corresponding sides are the same.
- The corresponding angles are the same.