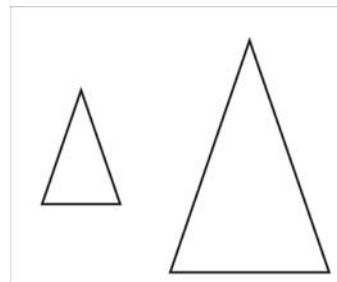


Discovering Ways Triangles are Similar

If two triangles are similar, what do you know about the corresponding parts of the two triangles?



Let's see if there is a short way to determine if the two triangles are similar.

Activity 1:

- Using a sheet of patty paper, draw any triangle ABC.
- Construct a second triangle DEF with $\angle D \cong \angle A$ and $\angle E \cong \angle B$. What will be true about the other two angles C and F? Why is this true?
- Carefully measure the sides of both triangles to the nearest millimeter. Compare the ratios of the corresponding sides. What is true about the ratios?
- Compare the results of your investigation with others near you. What conjecture can you make about two triangles that have two corresponding angles congruent?

Activity 2:

- Draw a triangle XYZ on a sheet of paper.
- First create three segments that equal a **multiple** of sides XY, YZ, and ZX using a compass. Call these segments X'Y', Y'Z', and Z'X'.
- Use a compass to construct a second triangle X'Y'Z'.
- Compare the corresponding angles of triangles XYZ and X'Y'Z'. What is true about the two triangles.
- Compare your results with others around you. What conjecture can you make about the two triangles that were made with three sides that are proportional to each other?

Activity 3:

- Draw a triangle KLM on a sheet of paper.
- First create two segments that equal a multiple of sides KL and KM using a compass. Call these segments K'L' and K'M'.
- Use your compass to duplicate angle K. Call this new angle K'. Then use your compass to copy K'L' and K'M' along the two sides of angle K'. Complete the construction of a second triangle K'L'M'. Compare the corresponding angles and the length of sides LM and L'M'. What do you notice? Are the triangles similar?
- Compare your results with others around you. What conjecture can you make about the two triangles that were made with two proportional sides and the included angle?