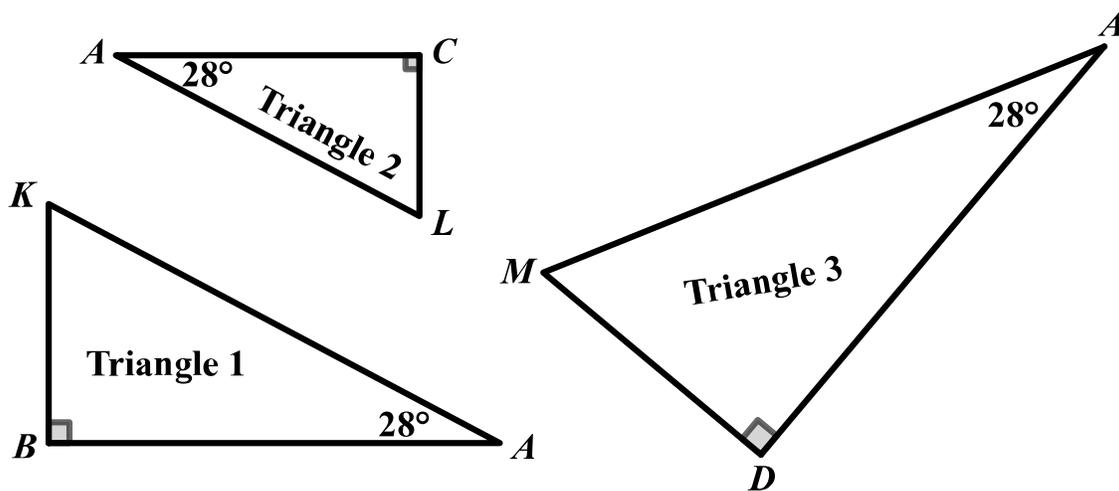


RIGHT TRIANGLE EXPLORATION (SAMPLE RESPONSES)

Gathering Data

Record your findings to complete the table below.

- Make sure each row contains the corresponding parts of each triangle.
- Identify or calculate the values of the angle measures of each triangle.
- Use a ruler to find the measurement of each side length. Use centimeters.



Triangle 1	Triangle 2	Triangle 3
$m\angle ABK = 90^\circ$	$m\angle ACL = 90^\circ$	$m\angle ADM = 90^\circ$
$m\angle BKA = 62^\circ$	$m\angle CLA = 62^\circ$	$m\angle DMA = 62^\circ$
$m\angle KAB = 28^\circ$	$m\angle LAC = 28^\circ$	$m\angle MAD = 28^\circ$
$\overline{AB} = 6\text{ cm}$	$\overline{AC} = 4\text{ cm}$	$\overline{AD} = 7.1\text{ cm}$
$\overline{BK} = 3.2\text{ cm}$	$\overline{CL} = 2.1\text{ cm}$	$\overline{DM} = 3.8\text{ cm}$
$\overline{KA} = 6.8\text{ cm}$	$\overline{LA} = 4.6\text{ cm}$	$\overline{MA} = 8\text{ cm}$

Comparing Data

Use your measurements from the previous table to write each ratio below in decimal form.

Ratio 1	Ratio 2	Ratio 3	Ratio 4
$\frac{\overline{AB}}{\overline{KA}} = 0.88$	$\frac{\overline{BK}}{\overline{KA}} = 0.47$	$\frac{\overline{AB}}{\overline{BK}} = 1.88$	$\frac{\overline{BK}}{\overline{AB}} = 0.53$
$\frac{\overline{AC}}{\overline{LA}} = 0.87$	$\frac{\overline{CL}}{\overline{LA}} = 0.46$	$\frac{\overline{AC}}{\overline{CL}} = 1.90$	$\frac{\overline{CL}}{\overline{AC}} = 0.53$
$\frac{\overline{AD}}{\overline{MA}} = 0.89$	$\frac{\overline{DM}}{\overline{MA}} = 0.48$	$\frac{\overline{AD}}{\overline{DM}} = 1.87$	$\frac{\overline{DM}}{\overline{AD}} = 0.54$

Making Observations

What have you observed about these ratios?

Each ratio was very similar for every triangle.

Making Predictions

Create a hypothesis about the relationship among the lengths of the sides of the right triangles based on the information that your group gathered and discussed.

When we divided the long side by the hypotenuse, we got about 0.9 (ratio 1).

Ratio 2 seems to be the short side divided by the hypotenuse.

Ratio 3 was the long side divided by the short side.

And ratio 4 was the reciprocal of ratio 3.

These corresponding parts seem to make similar ratios.