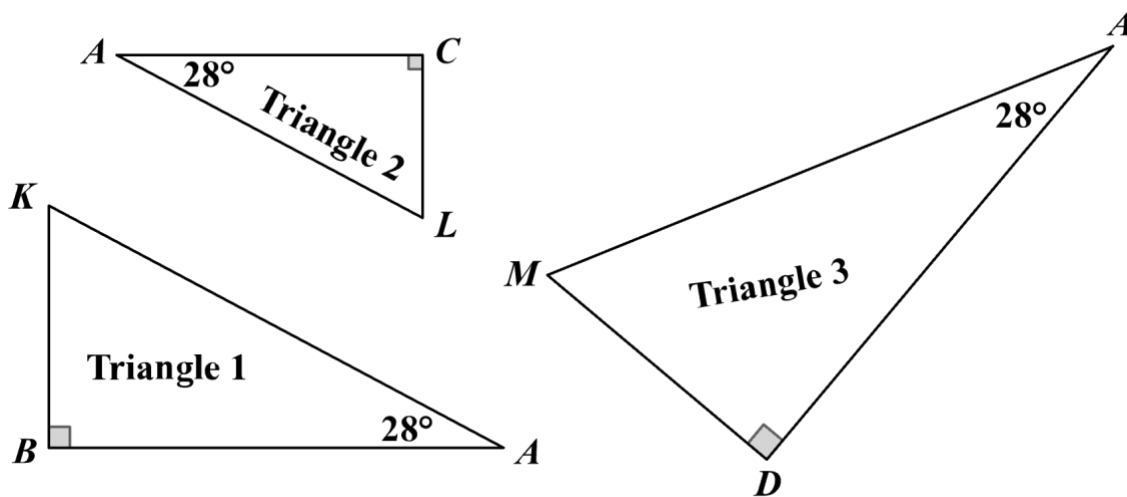


## RIGHT TRIANGLE EXPLORATION (SAMPLE RESPONSES)

### 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.*