



TRANSFORMATIONS #2

What shapes have 4 sides?

What shapes have 4 angles?

What makes a rectangle different from other shapes?

What information would be enough to convince you that a shape was a rectangle?

In this activity you will practice your reasoning skills by observing what transformations do to shapes.

1. Draw a scalene, right triangle.

- a. Rotate your triangle 180 degrees about the hypotenuse's midpoint. (Draw it.)
- b. What shape is formed? Give detailed reasoning for your conjecture.

- c. Describe all the characteristics of your new shape that you think are true. Explain your reasoning. (Hint: rotating your original triangle makes certain things happen.)

2. Draw a rectangle.

- a. Reflect your rectangle about one of its sides. (Draw it.)
- b. What shape is formed? Give detailed reasoning for your conjecture.

- c. Describe all the characteristics of your new shape that you think are true. Explain your reasoning.

3. Find a shape to which you can apply a transformation (or transformations) so that you end up with one of these shapes: *Square, Right Triangle, Parallelogram, Kite, Trapezoid*
 - a. Describe the starter shape carefully to ensure that it gives the desired resulting shape.
 - b. Give some proof as to why you think your transformation works. That is, carefully explain why you are sure your ending shape has to be what you say it is.
 - c. Repeat the above steps for a different shape: *Square, Right Triangle, Parallelogram, Kite, Trapezoid*