

## Possible Solutions for 2.

The area of the shape below is 36 square inches.



If a scale factor of  $\frac{1}{2}$  is applied to the shape, what would happen to the area?

### Possible Solution 1

- Both the dimensions of the figure must be multiplied by the scale factor  $\frac{1}{2}$  before the scale factor can be applied to the area.
- Because the original area is 36,  $36 \times \frac{1}{4} = 9$  or  $36 \div 4 = 9$ , the new area would be  $\frac{1}{4}$  of the original area.

### Possible Solution 2

- The area of a shape is based on multiplication, so the scale factor must be applied to both the length and width of the rectangle. Instead of using a scale factor of  $\frac{1}{2}$ , the appropriate scale factor to apply is  $\frac{1}{2} \times \frac{1}{2}$  or  $\frac{1}{4}$ .
- Therefore, applying the scale factor of  $\frac{1}{4}$  to the shape, the new area would be 9 square inches.