Lesson Summary

To compute the scale factor from one drawing to another, use the representation:

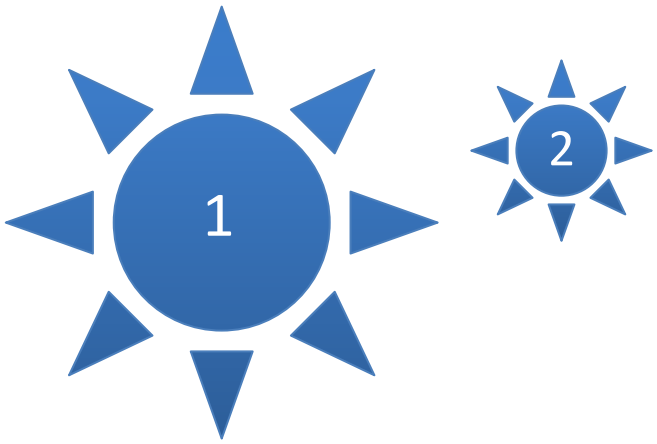
$$\text{Quantity} = \text{Percent} \times \text{Whole}$$

where the whole is the length in the actual or original drawing and the quantity is the length in the scale drawing.

If the lengths of the sides are not provided but two scale factors are provided, use the same relationship but use the scale factors as the whole and quantity instead of the given measurements.

Problem Set

1. The scale factor from Drawing 1 to Drawing 2 is $41\frac{2}{3}\%$. Justify why Drawing 1 is a scale drawing of Drawing 2 and why it is an enlargement of Drawing 2. Include the scale factor in your justification.



2. The scale factor from Drawing 1 to Drawing 2 is 40%, and the scale factor from Drawing 2 to Drawing 3 is 37.5%. What is the scale factor from Drawing 1 to Drawing 3? Explain your reasoning, and check your answer using an example.

3. Traci took a photograph and printed it to be a size of 4 units by 4 units as indicated in the diagram. She wanted to enlarge the original photograph to a size of 5 units by 5 units and 10 units by 10 units.

   a. Sketch the different sizes of photographs.

   b. What was the scale factor from the original photo to the photo that is 5 units by 5 units?

   c. What was the scale factor from the original photo to the photo that is 10 units by 10 units?

   d. What was the scale factor from the 5×5 photo to the 10×10 photo?

   e. Write an equation to verify how the scale factor from the original photo to the enlarged 10×10 photo can be calculated using the scale factors from the original to the 5×5, and then from the 5×5 to the 10×10.

4. The scale factor from Drawing 1 to Drawing 2 is 30%, and the scale factor from Drawing 1 to Drawing 3 is 175%. What are the scale factors of each given relationship? Then, answer the question that follows. Drawings are not to scale.

   a. Drawing 2 to Drawing 3

   b. Drawing 3 to Drawing 1

   c. Drawing 3 to Drawing 2

   d. How can you check your answers?