



Unit 7 Similarities and Transformations



How can I put Hayley and Owen on this slide so you can see both of them???

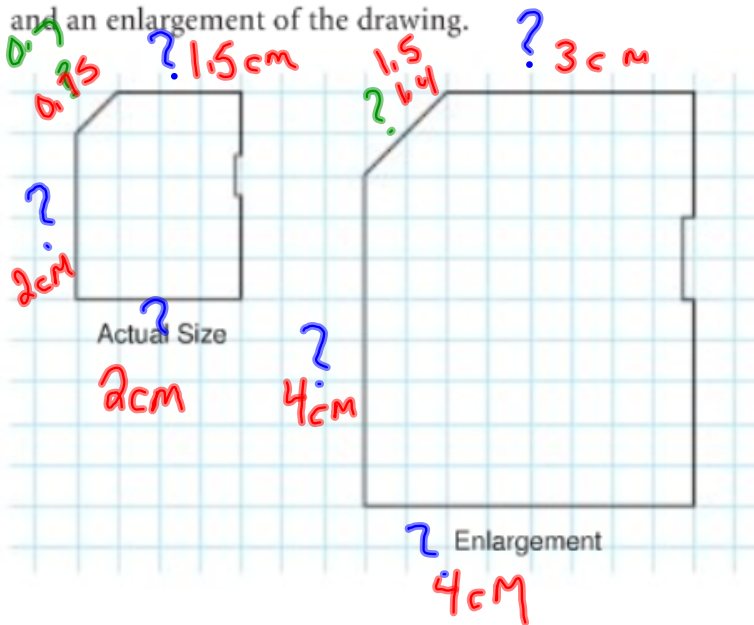


Section 7.1 Scale Diagrams and Enlargements

Page 318 Draw the memory cards

You will need 0.5-cm grid paper.

Here is an actual size drawing of a memory card for a digital camera and an enlargement of the drawing.



- Copy the drawings on grid paper. Measure the lengths of pairs of matching sides on the drawings. Label each drawing with these measurements.
- For each measurement, write the fraction: $\frac{\text{Length on enlargement}}{\text{Length on actual size drawing}}$. Write each fraction as a decimal. What do you notice about these numbers?

Length of enlargement
Length of actual size

$$\frac{3\text{cm}}{1.5\text{cm}} = \frac{4\text{cm}}{2\text{cm}} = \frac{4\text{cm}}{2\text{cm}}$$

$$2 = 2 = 2$$

A diagram that is an enlargement or a reduction of another diagram is called a **scale diagram**.

Actual



12cm



4cm

15cm

5cm

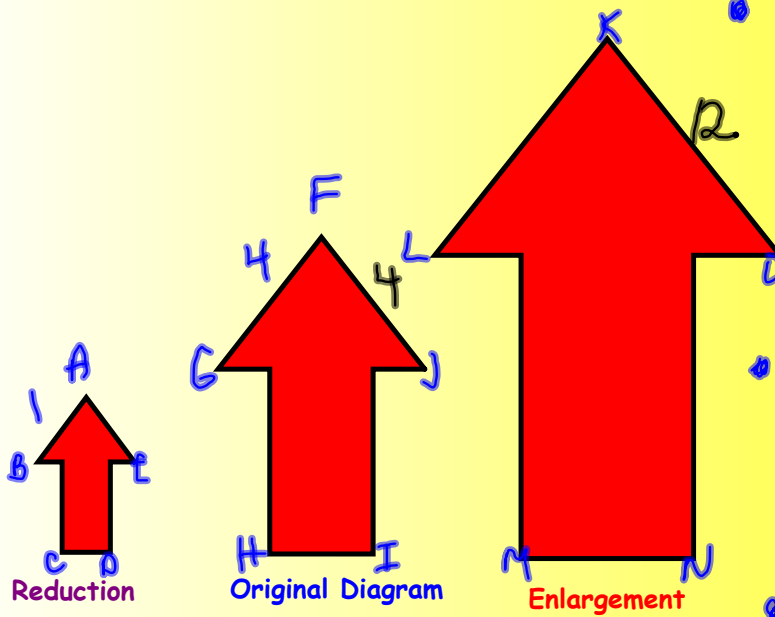
1) Is this a reduction or enlargement?

2) What is the fraction for the length?

$$\frac{\text{Length of reduction}}{\text{length of actual size}} = \frac{5}{15} = \frac{1}{3}$$

3) What is the scale factor?

$$15 \times \frac{1}{3} = \frac{15}{3} = 5$$



- Comparing the lengths in the enlargement or reduction to the matching length in the original will give a **proportion**.

$$\frac{\text{length of enlargement/reduction}}{\text{actual size}}$$

- Matching lengths on the original diagram and the scale diagram are called **corresponding lengths**.

- The fraction is called a **scale factor** of the diagram [can be expressed as a decimal also]

$$\frac{AB}{FG} = \frac{1}{4}$$

$$0.25$$

$$\frac{BA}{GF}$$

↑ scale factor

$$\frac{KO}{FJ} = \frac{12}{4} = 3$$

↑ scale factor