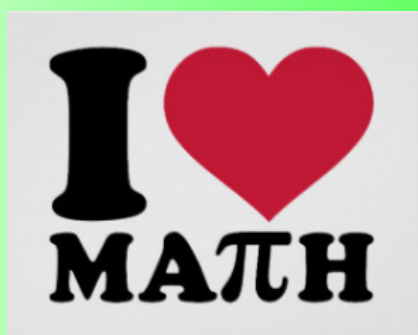


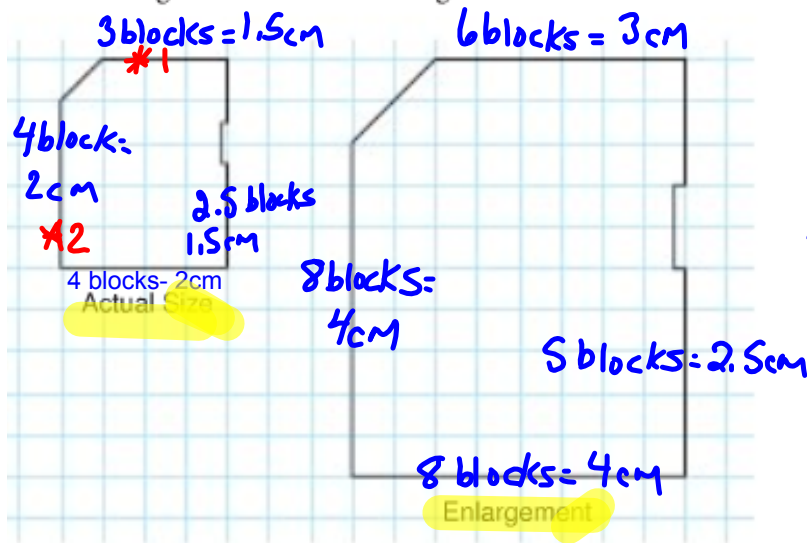
Unit 7 Similarities and



Transformations



and an enlargement of the drawing.



1 block = 0.5 cm

*1 $\frac{\text{Length Enlargement}}{\text{Length Actual}}$
 $= \frac{6}{3}$
 $= 2$

- 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?

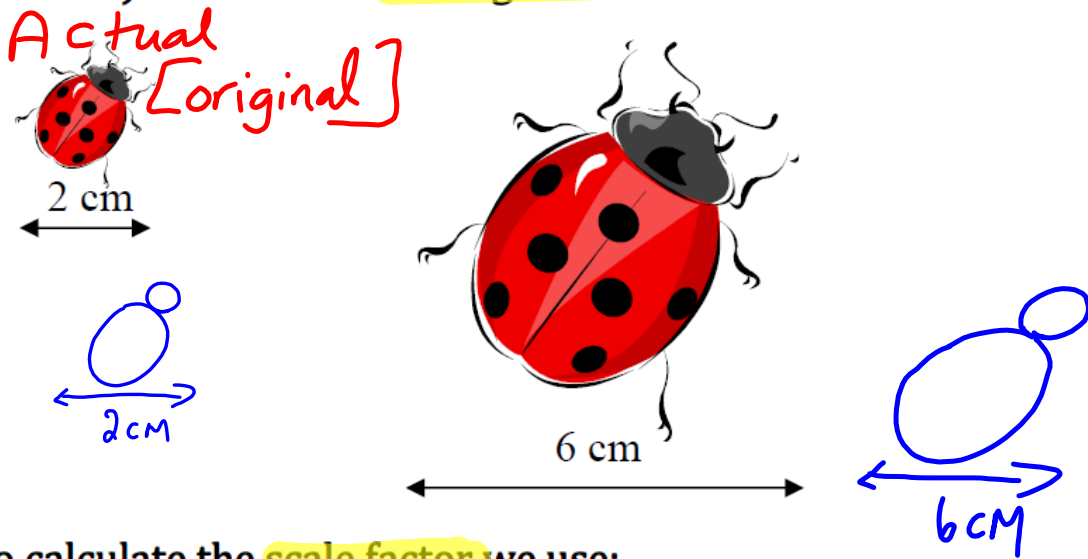
*2 $\frac{\text{length enlargement}}{\text{Length Actual}}$
 $= \frac{4}{2}$
 $= 2$

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



Section 7.1 Scale Diagrams and Enlargements

A diagram that is an enlargement (bigger) or a reduction (smaller) is called a *scale diagram*.

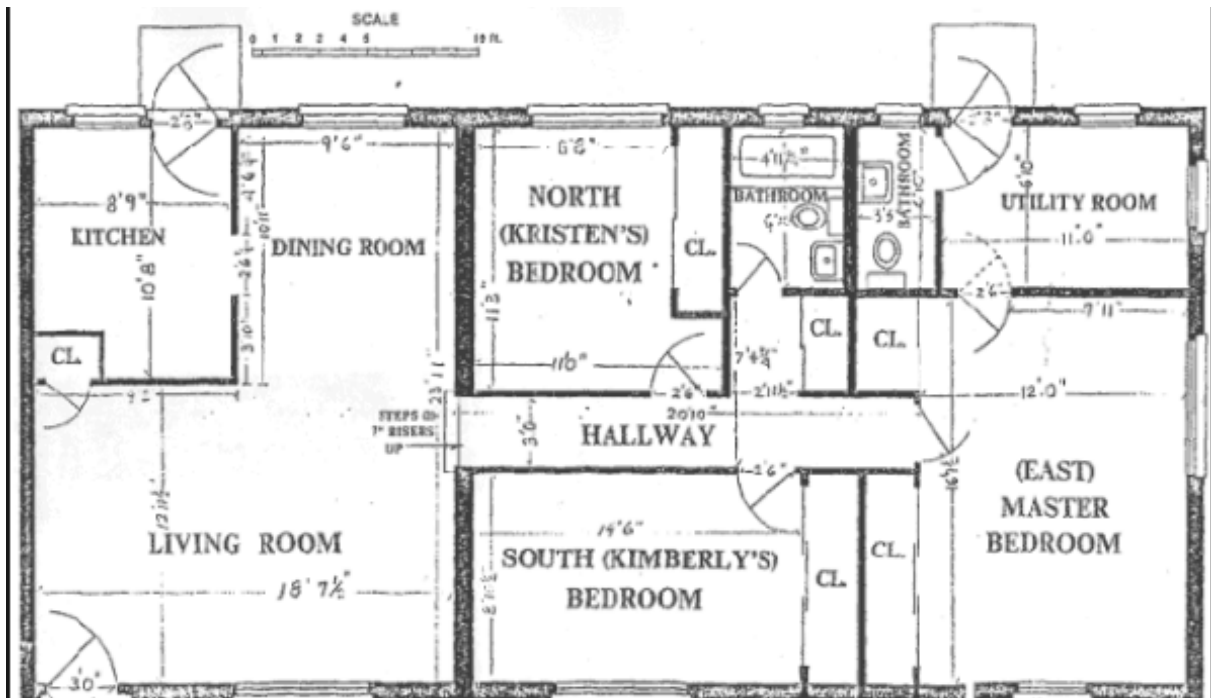


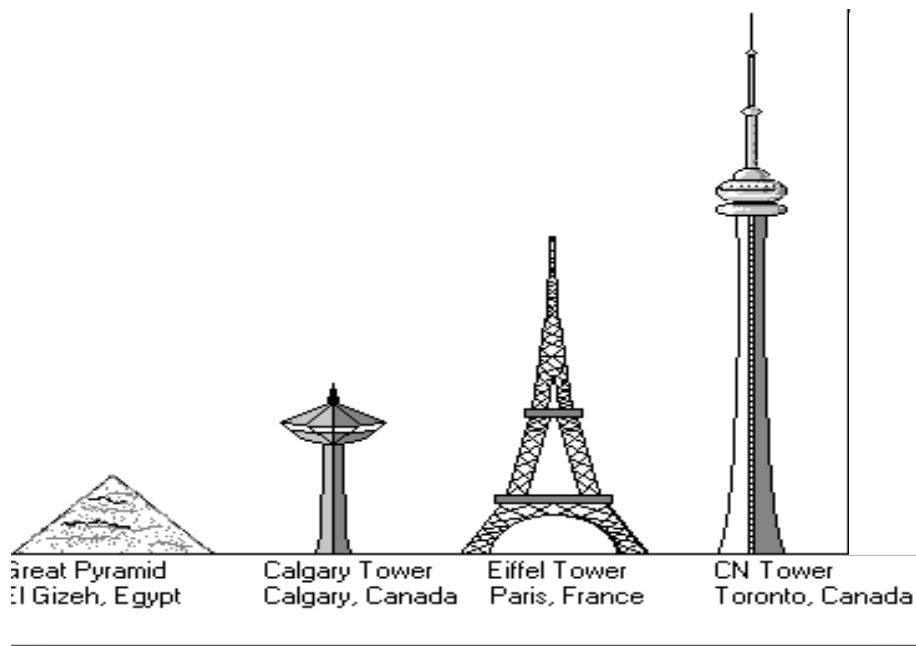
To calculate the *scale factor* we use:

$$\frac{\text{Dimension of the scale diagram}}{\text{Dimension of the original diagram}} = \frac{6}{2} = 3$$

~~$$\frac{6}{2} = 3$$

$$\frac{6}{3} = 2$$~~





SCALE FACTOR= length of enlargement/reduction
actual [original] size

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

$$0.75 = \frac{3}{4}$$

Scale Factor:

- * Greater than 1 means enlargement.
- * Less than 1 means reductions

Actual [original]



4

5



12

15

1) Is this a reduction or enlargement?

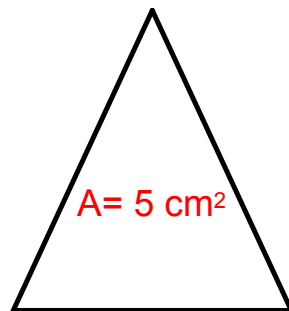
2) What is the scale factor?

$$\text{Scale factor} = \frac{\text{Enlargement}}{\text{actual}}$$

$$= \frac{12}{4}$$

Scale factor = 3

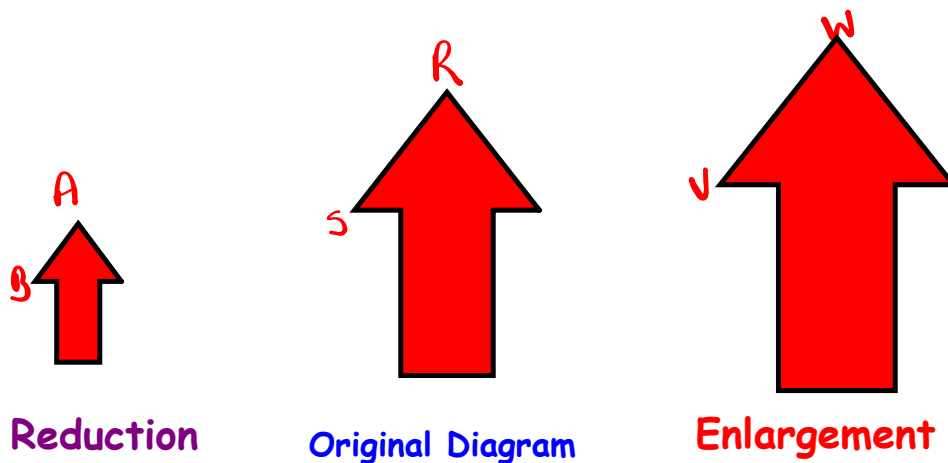
The enlargement is 3 times bigger than the original.



What is the area of a new triangle that is enlarged by a scale factor of 1.6 ?

$$\begin{aligned} \text{New } \underline{\text{Area}} &= \text{Scale factor} \times \text{original} \\ &= 1.6 \times 5 \\ &= 8 \text{ cm}^2 \end{aligned}$$

Matching sides on the original diagram and the scale diagram are called **corresponding sides**.
 [matching]



Pairs of corresponding sides all have the same scale factor so we say the lengths are **proportional**.