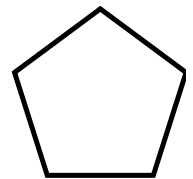
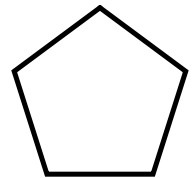


Section 7.1/7.2 Scale
Diagrams and
Enlargement/Reductions

scaled measurement
original

	Scale factor	Reduction or enlargement
a)	2	Enlargement
b)	$0.6 = \frac{6}{10}$	Reduction
c)	$\frac{5}{2} = 2.5$	Enlargement
d)	$\frac{1}{6}$	Reduction



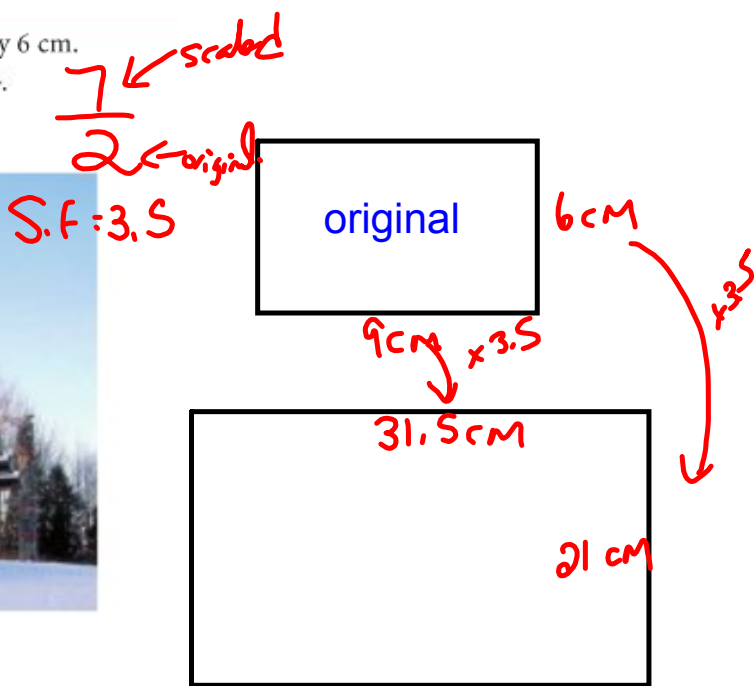
Summary... 7.1/7.2

1. Scale factor = $\frac{\text{scaled measurement [enlargement/reduction]}}{\text{original [actual]}}$

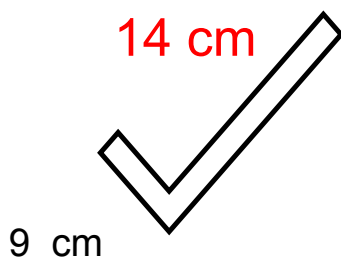
2. To find the unknown in a scaled diagram...

? in scaled diagram = scale factor x original

This photo of longhouses has dimensions 9 cm by 6 cm.
 The photo is to be enlarged by a scale factor of $\frac{7}{2}$.
 Calculate the dimensions of the enlargement.



- A. Find the scale factor in the following diagram.
- B. Find the unknown side.

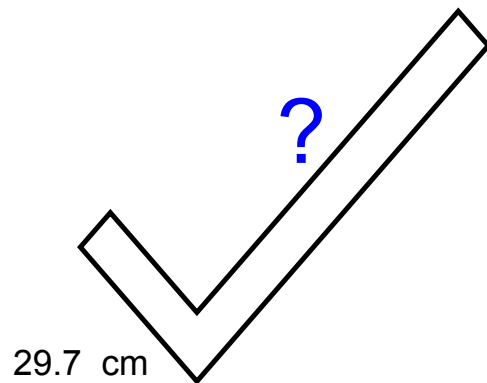


Original

$$S.F = \frac{\text{scaled diagram}}{\text{original}}$$

$$= \frac{29.7}{9}$$

$$S.F = 3.3$$



$$\text{Unknown} = \text{original} \times S.F$$

$$= 14 \times 3.3$$

$$= 46.2 \text{ cm}$$



Original diagram

Diameter of circle 3 cm
height of heart 0.6 cm



Scale diagram

Diameter of circle 2 cm
Height of heart is 0.4 cm

	Diameter	Height
Scale Factor	$\frac{2}{3} = 0.\bar{6}$	$\frac{0.4}{0.6} = 0.\bar{6}$
$\frac{\text{scaled}}{\text{original}}$		

The length of a desk is 1.6 m.

↑
actual

$$1 \text{ m} = 100 \text{ cm}$$



← 160 cm →

← 1.6 m →



A. In a scale drawing that has a scale factor of $\frac{2}{5}$ what is the length in cm? = 0.4

$$\begin{aligned} \text{New length} &= \text{S. F} \times \text{original} \\ &= 0.4 \times 160 \\ &= 64 \text{ cm} \end{aligned}$$

B. In a picture the length is 36 cm. What is the scale factor for this picture?

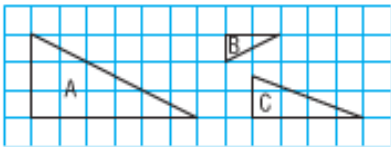
$$\text{S. F} = \frac{\text{scaled}}{\text{original}} = \frac{36}{160} = 0.225$$

C. If on a billboard the length is 5.2 m. What is the scale factor?

$$\begin{aligned} \text{SF} &= \frac{\text{scaled}}{\text{original}} \\ &= \frac{5.2}{1.6} \\ &= 3.25 \end{aligned}$$

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9. Which two polygons have pairs of corresponding lengths that are proportional? Identify the scale factor for the reduction.



original →

Scale factor = $\frac{\text{Scaled}}{\text{original}}$

	Long	Short
$\frac{B}{A}$	$\frac{2}{6} = 0.33$	$\frac{1}{3} = 0.33$
$\frac{B}{C}$	$\frac{2}{4} = 0.5$	$\frac{1}{1.5} = 0.66$
$\frac{C}{A}$	$\frac{4}{6} = 0.66$	$\frac{1.5}{3} = 0.5$

