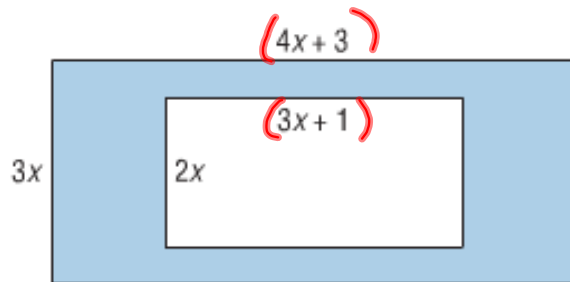


Warm-Up

This diagram shows one rectangle inside another.



$$\begin{array}{l}
 (4x+3) \\
 \begin{array}{|c|} \hline 3x \\ \hline \end{array} \\
 \\
 (3x+1) \\
 \begin{array}{|c|} \hline 2x \\ \hline \end{array} \\
 \\
 3x(4x+3) \\
 12x^2 + 9x \\
 - (2x(3x+1)) \\
 - (6x^2 + 2x)
 \end{array}$$

- Determine the area of the shaded region. Justify your answer.
- Determine the area of the shaded region when $x = 1.5$ cm.



$$\begin{array}{l}
 12x^2 + 9x - 6x^2 - 2x \\
 12x^2 - 6x^2 + 9x - 2x \\
 6x^2 + 7x \\
 6(1.5)^2 + 7(1.5) \\
 \text{24}
 \end{array}$$

Homework Questions???

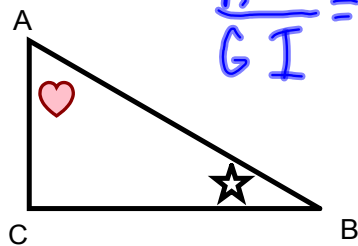
$$\frac{-x}{-1} > \frac{-25}{-1}$$
$$x < 25$$

$$\begin{array}{l}
 A \qquad \qquad \qquad B \\
 17 + 11d = 33 + 9d \\
 17 + 11d - 9d = 33 + \boxed{9d - 9d} \\
 17 + 2d = 33 \\
 \boxed{17 - 17} + 2d = 33 - 17 \\
 \frac{2d}{2} = \frac{16}{2} \\
 d = 8
 \end{array}
 \left. \vphantom{\begin{array}{l} A \\ B \end{array}} \right\}
 \begin{array}{l}
 A > B \\
 17 + 11d > 33 + 9d \\
 \\ \\
 d > 8
 \end{array}$$

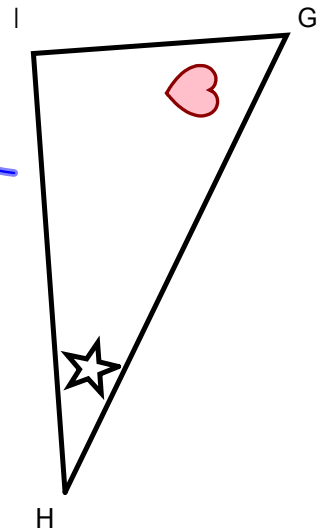
Similar Polygons

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

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

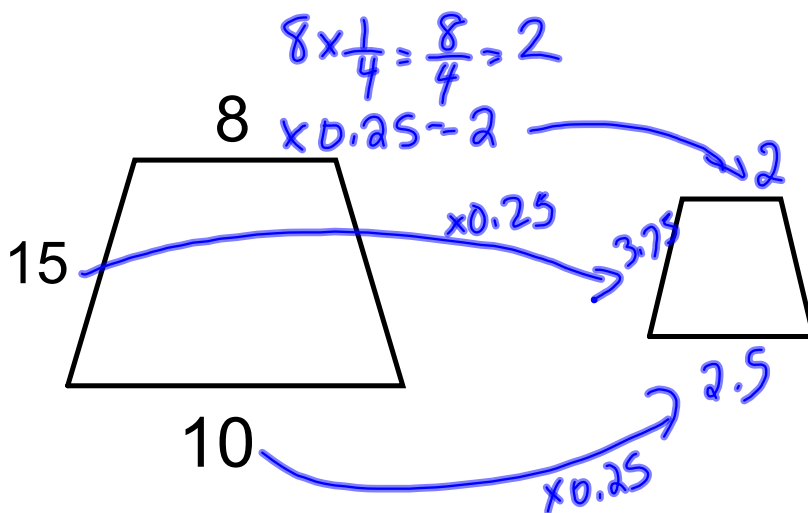


$$\frac{AC}{GI} = \frac{CB}{IH} = \frac{AB}{GH}$$



A. Sketch a diagram that is $\frac{1}{4}$ the size of the original $\hookrightarrow 0.25$

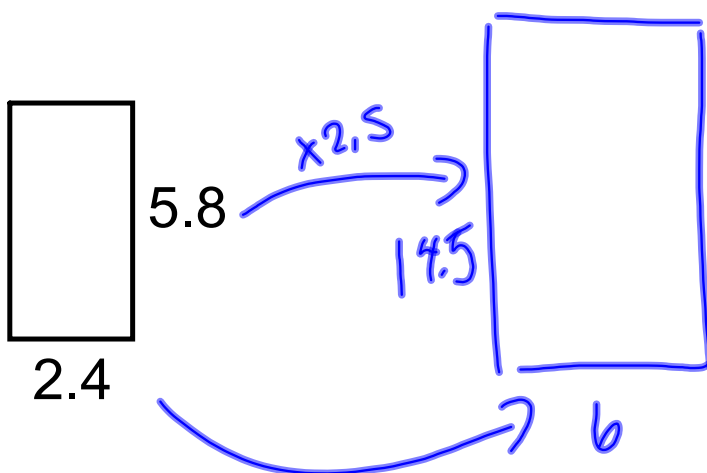
B. Is this a reduction or enlargement?



A. Sketch an image with a scale factor of $\frac{5}{2}$.

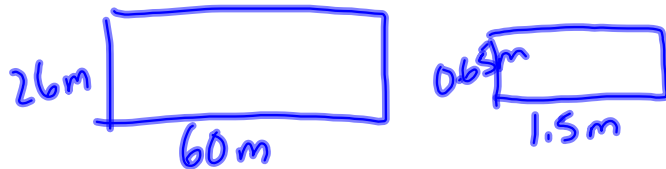
B. Is this a reduction or enlargement?

\downarrow
2.5



A. what is the scale factor?

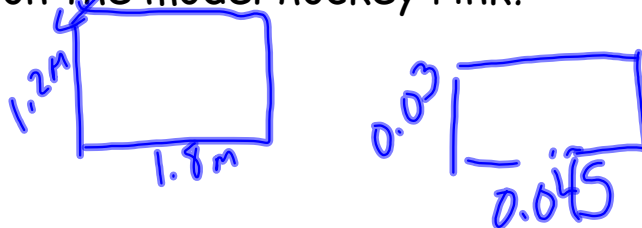
Sketch



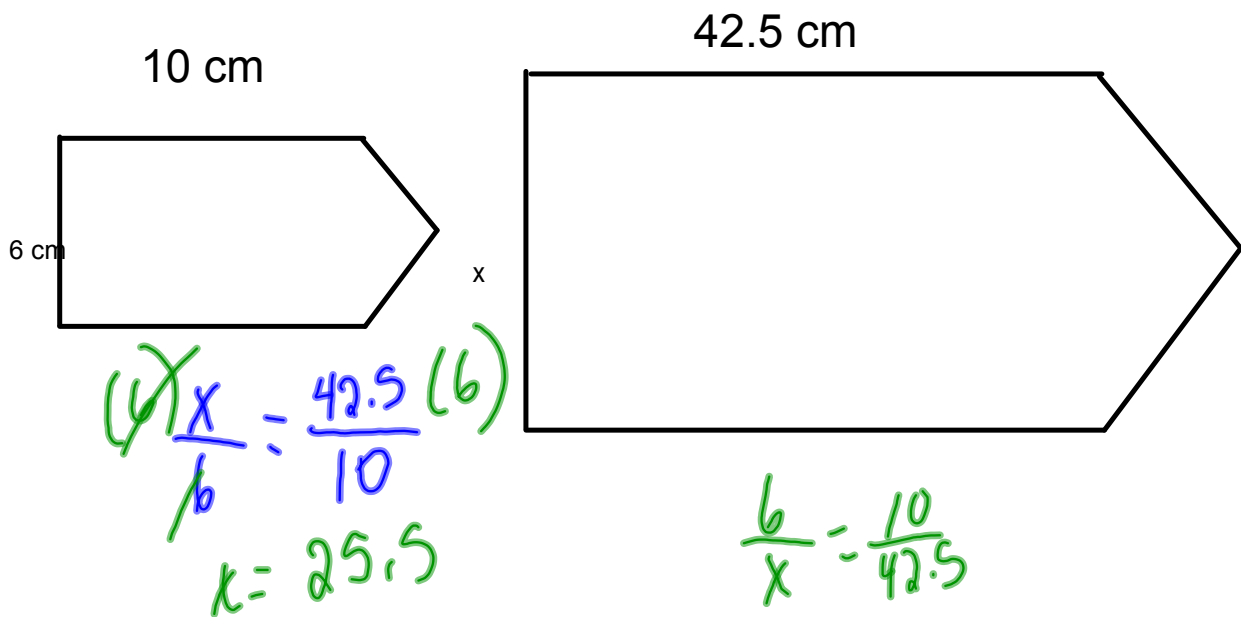
$$\text{Scale factor} = \frac{1.5}{60} = 0.025$$

$$\frac{0.65}{26} = 0.025$$

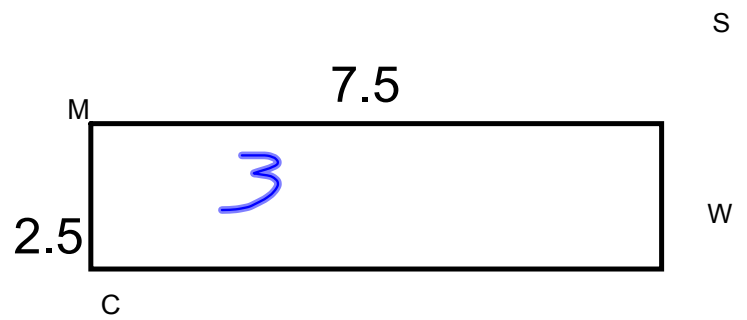
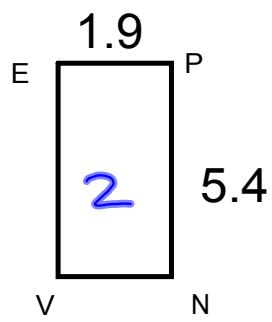
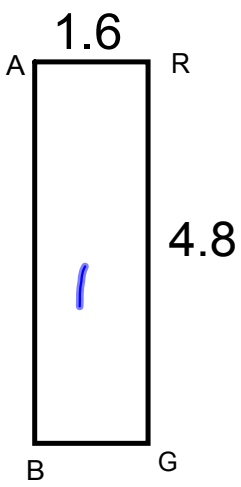
B. A hockey net is 1.8 m wide and 1.2 m high. What are the dimensions of a goal on the model hockey rink?



These polygons are similar
Solve for x



Are these Rectangles similar?



Similar Triangles

Triangles are a special polygon.

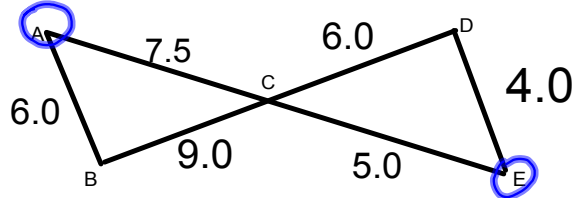
1. The measures of corresponding angles must be equal

OR

2. The ratios of the lengths of corresponding sides must be equal

• shortest side with shortest
• med with med
• longest with longest

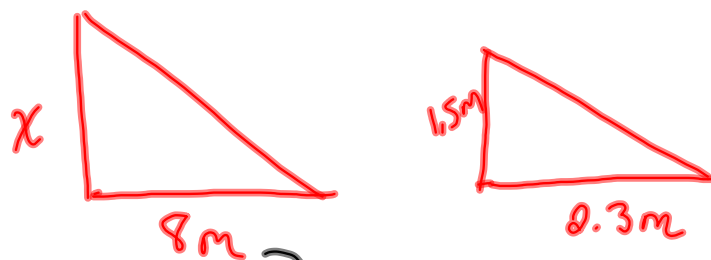
List the corresponding sides



$$\frac{AB}{ED} = \frac{BC}{DC} = \frac{AC}{EC}$$

Bill is 1.5 m tall. His shadow is 2.3 m long. He is standing beside a tree that has a shadow that is 8 m long. How tall is the tree?

Sketch



$$\frac{(1.5)x}{1.5} = \frac{8(1.5)}{2.3}$$

$$x = 5.22 \text{ m}$$

1-13
18-22
30-31

