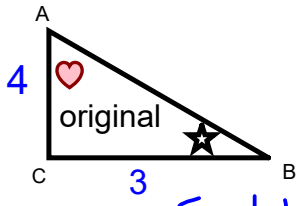
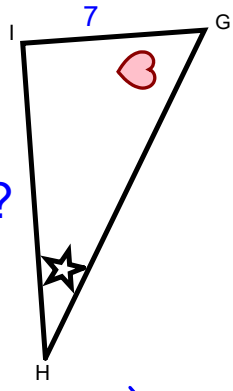
Similar Polygons Chp 7

*Scale Factor= length of enlargement/reduction / actual size [original]





1) List the corresponding angles [matching]
2) Ratio of corresponding sides
3) find the scale factor.
4) Find side HI?

1) $\angle A = \angle G$
$\angle B = \angle H$
$\angle C = \angle I$

2) $\frac{CB}{IH} = \frac{BA}{HG} = \frac{CA}{IG}$

3) Scale factor $= \frac{\text{Enlargement}}{\text{original}}$
$= \frac{7}{4}$
$= 1\frac{3}{4}$ 1.75

4) $\frac{CB}{IH} = \frac{BA}{HG} = \frac{CA}{IG}$
$\frac{3}{?} = \frac{BA}{HG} = \frac{4}{7}$

$\frac{3}{?} = \frac{4}{7}$

Flip

$\frac{x}{3} = \frac{7}{4}$ (3)

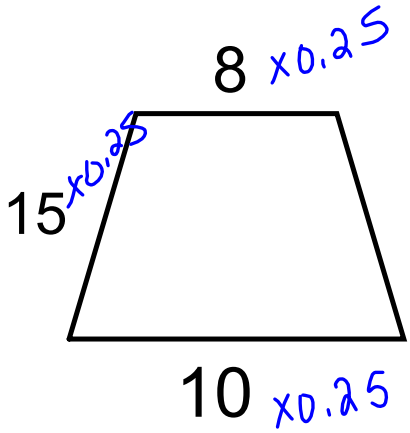
$x = \frac{21}{4}$
$x = 5\frac{1}{4}$ 5.25

#2.

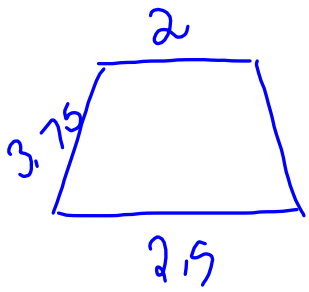
A. Sketch a diagram that is 1/4 the size of the original

0.25

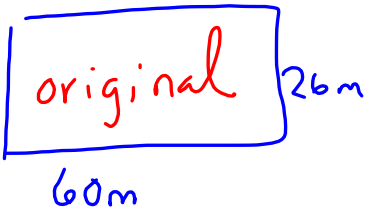
B. Is this a reduction or enlargement?



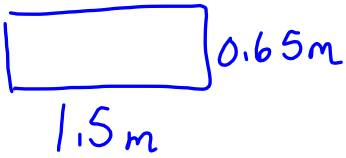
New ___ = S.F x original



Rink



model



Find scale factor.

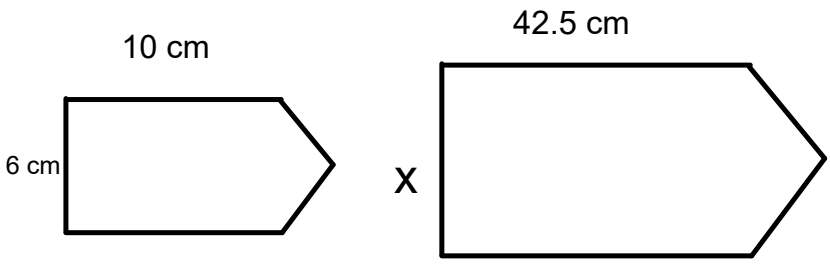
$S.f = \frac{R}{O}$

$S.f \frac{1.5}{60}$

$S.f = 0.025$

$\frac{0.65}{26}$

These polygons are similar
Solve for x



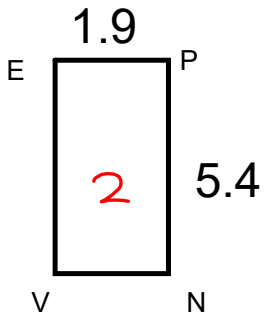
$\frac{x}{6} = \frac{42.5}{10}$ (6) (6)

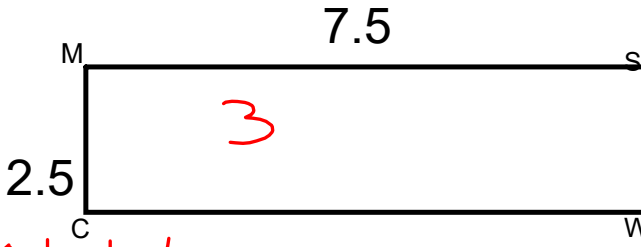
$\frac{6}{x} = \frac{10}{42.5}$

$x = \frac{255}{10}$

$x = 25.5$

Are these Rectangles similar?





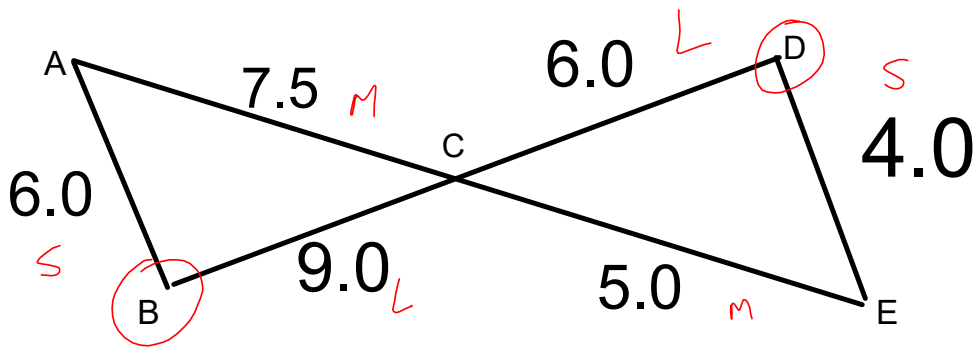
	Long / Long	Short / Short	
$\frac{1}{2}$	$\frac{4.8}{5.4} = 0.8$	$\frac{1.6}{1.9} = 0.84$	X
$\frac{1}{3}$	$\frac{4.8}{2.5} = 0.64$	$\frac{1.6}{2.5} = 0.64$	✓
$\frac{2}{3}$	$\frac{5.4}{7.5} = 0.72$	$\frac{1.9}{2.5} = 0.76$	X

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



Ratio of corresponding sides

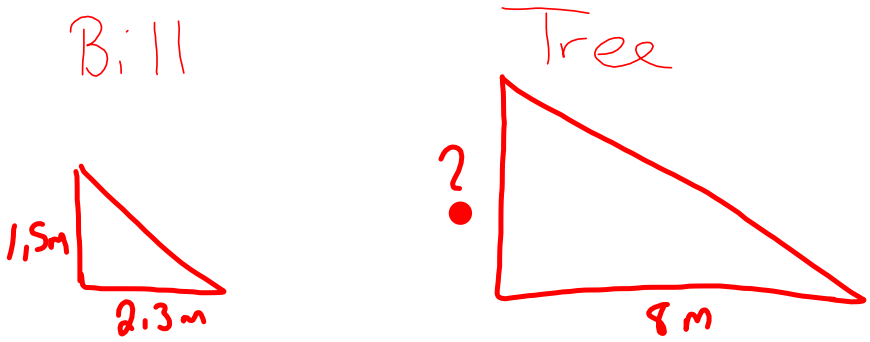
$$\frac{BC}{DC} = \frac{AC}{EC} = \frac{AB}{ED}$$

Scale factor?

$$\frac{9}{6} = \frac{7.5}{5} = \frac{6}{4}$$

$$1.5 = 1.5 = 1.5$$

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 a diagram

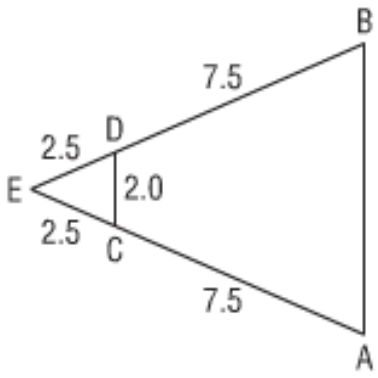


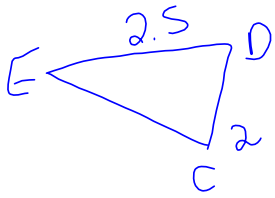
$$\frac{\text{height tree}}{\text{height bill}} = \frac{\text{length tree shadow}}{\text{length bill shadow}}$$

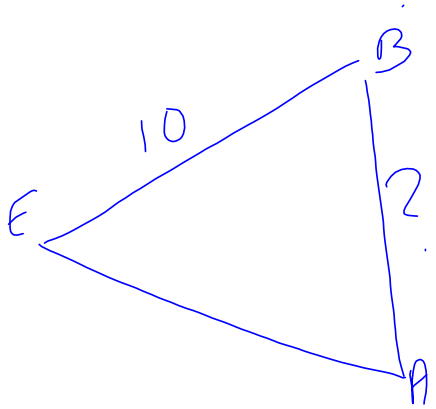
$$\frac{x}{1.5} = \frac{8\ (1.5)}{2.3}$$

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

Solve for BA





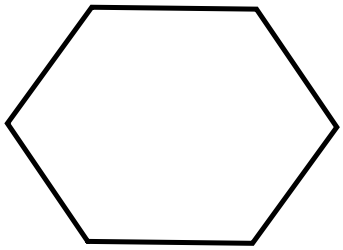


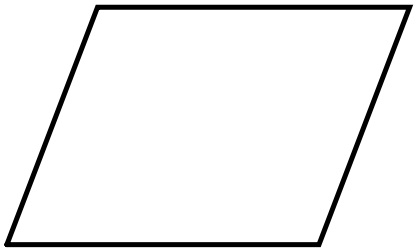
$$\frac{BA}{DC} = \frac{BE}{DE}$$

$$\frac{x}{2} = \frac{10}{2.5} \quad (2)$$

$$x = 8$$

Lines of Symmetry





P (2, 2)

A (5, 5)

M (8, 2)

#1

Line of reflection 2 on y axis

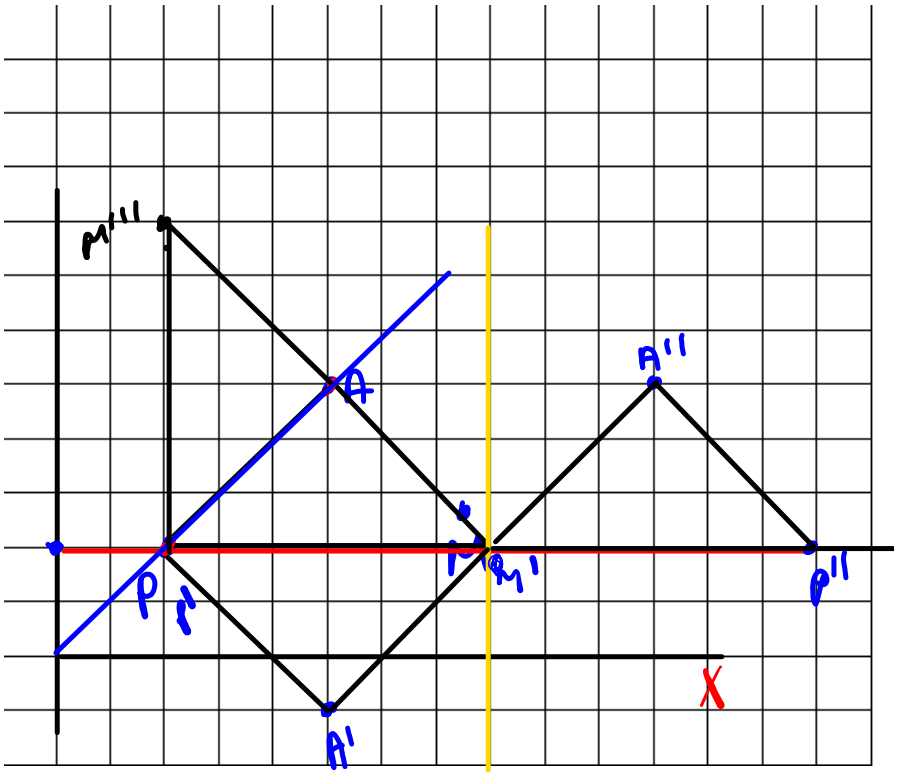
#2

Line of reflection

8 on x axis

#3

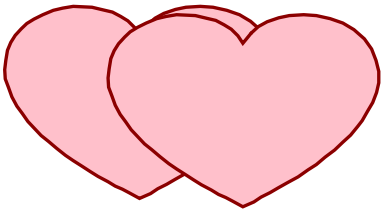
(2,2) and (1,1)

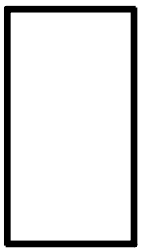


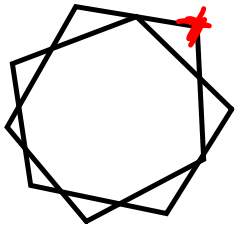
Rotational Symmetry

- The number of times a shape coincides with itself, during rotation of 360, **ORDER OF ROTATION!**

- **ANGLE OF ROTATION** -- $\frac{360}{\text{order of rotation}}$







Plot

A. [4, 1]
B [2, 1]
C [2, 4]
D [4,4]

A. Rotate 90 degrees at point A

B. rotate 180 degrees at point A

C.Translation R4, U5