WARM-UP

$$(4)\frac{m}{4} + {}^{(4)}5 = {}^{(4)}\frac{1}{2} - {}^{(4)}m$$

$\frac{4m}{4} + 20 = \frac{4}{2} - 4m$

$m + 20 = 2 - 4m$

$m + 4m + 20 = 2 \cancel{+4m+4m}$

$5m + 20 = 2$

$5m \cancel{+20-20} = 2 - 20$

$\frac{5m}{5} = \frac{-18}{5}$

$m = -18/5 \quad m = -3\frac{3}{5}$

2. Is the following a linear relation? if yes write the equation.

x	y	
0	-1	+3
1	2	+3
2	5	+3
3	8	

$y = 3x - 1$

Linear relation questions…

Jane is rowing at an average speed of 3 meters every second. Let d, represent distance and t represent time.

A. Create a table of values to show this relation

B. Graph the data…[will you join the points]

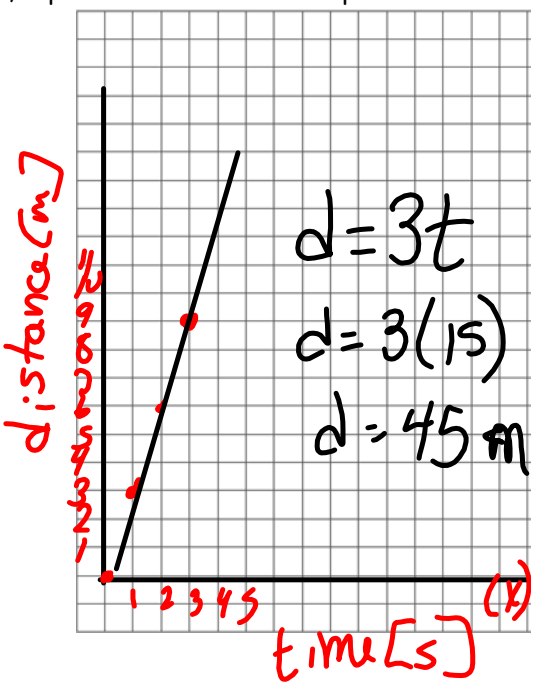
C. Is the relation linear?

D. Write an equation that relates distance and time.

E. How far does Jane row in 15 s?

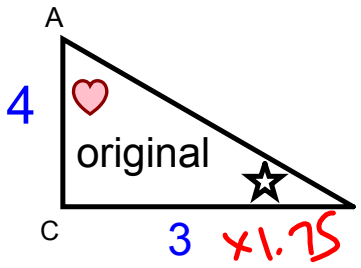
x y

t	d	
0	0	+3
1	3	+3
2	6	+3
3	9	+3



Similar Polygons Chp 7

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

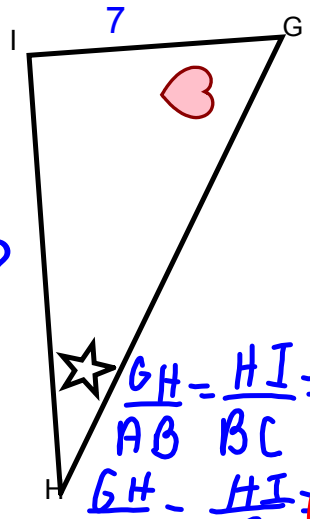


$\angle A = \angle G$

$\angle B = \angle H$

$\angle C = \angle I$

$\triangle CBA \sim \triangle IHG$?



1) List the corresponding angles

2) Ratio of corresponding sides

$\frac{GH}{AB} = \frac{HI}{BC} = \frac{IG}{CA}$

3) find the scale factor.

$\frac{GH}{AB} = \frac{HI}{3} = \frac{7}{4}$

1.75

4) Find side HI?

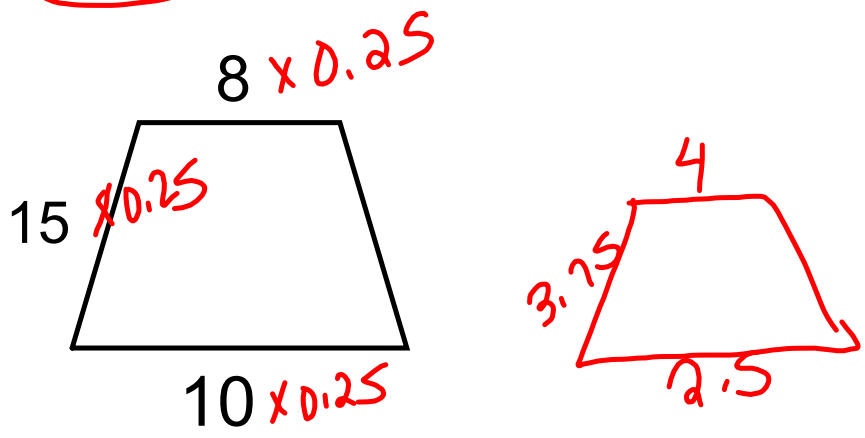
$3 \times 1.75 = 5.25$

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

$HI = 5.25$

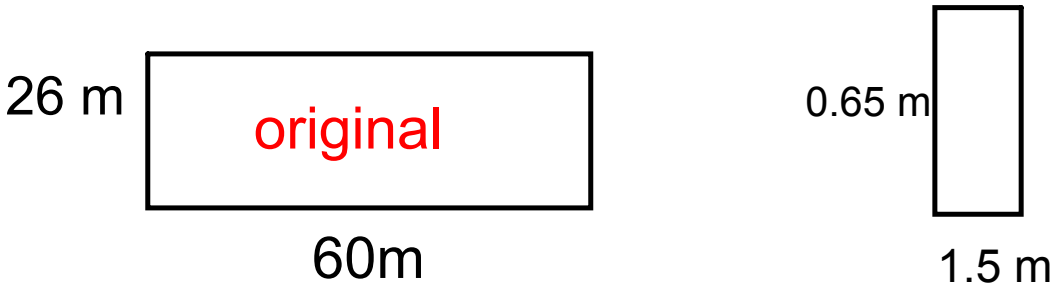
A. Sketch a diagram that is 1/4 the size of the original

B. Is this a reduction or enlargement?



A. what is the scale factor?

Sketch



$\frac{\text{long}}{\text{long}}$ $\frac{1.5}{60}$ = 0.025 = $\frac{\text{short}}{\text{short}}$ $\frac{0.65}{26}$ ← original

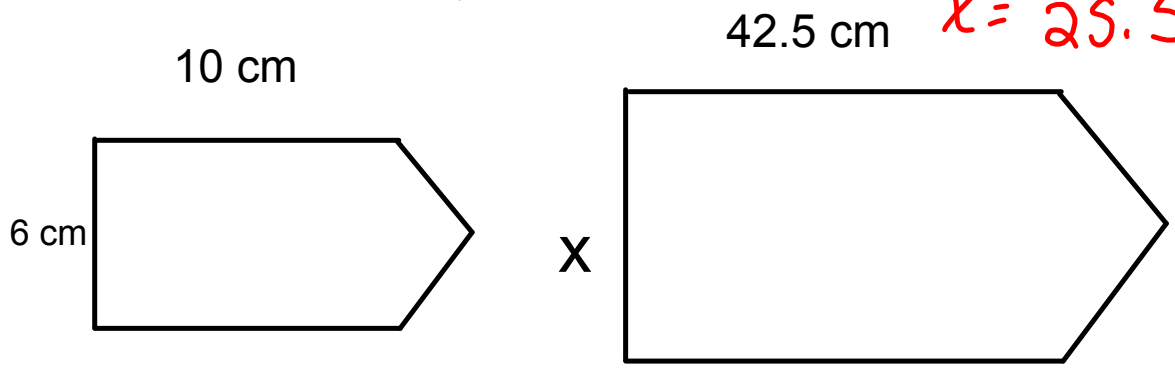
These polygons are similar

Solve for x

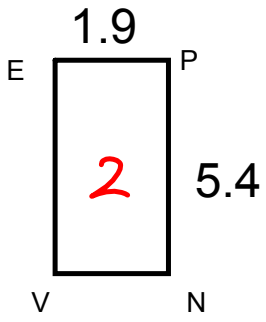
$\frac{6}{x} = \frac{10}{42.5}$

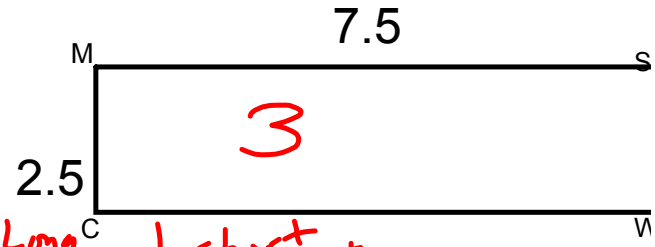
$\frac{x}{6} = \frac{42.5}{10}$

$x = 25.5$



Are these Rectangles similar?





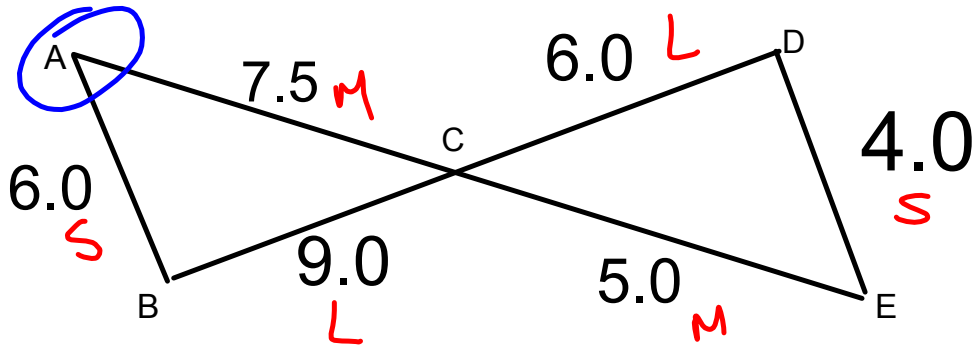
	Long / Long		short / short		
1 to 2	$\frac{4.8}{5.4}$	0.89	$\frac{1.6}{1.9}$	0.84	X
2 to 3	$\frac{5.4}{7.5}$	0.72	$\frac{1.9}{2.5}$	0.76	X
3 to 1	$\frac{4.8}{7.5}$	0.64	$\frac{1.6}{2.5}$	0.64	✓

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

short : medium : long

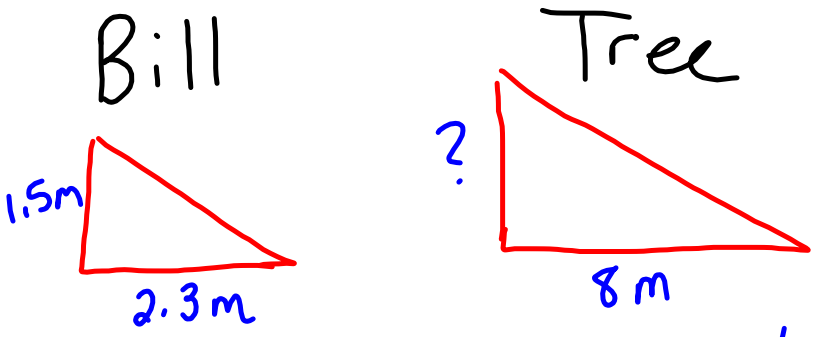
$\frac{AB}{ED} : \frac{AC}{EC} : \frac{BC}{DC}$

Scale factor?

$\frac{6}{4}$

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



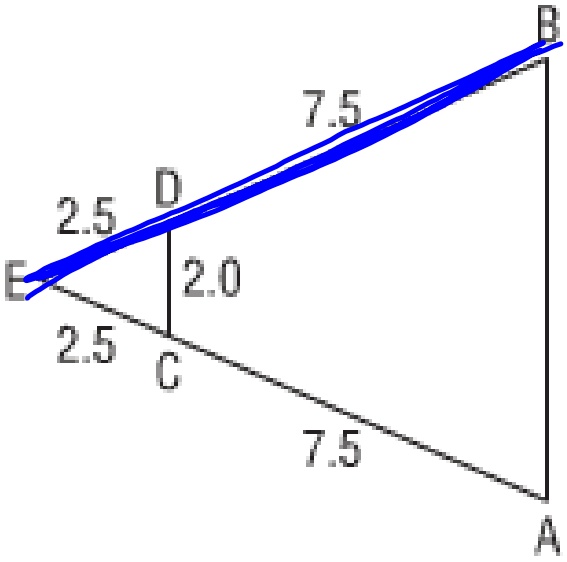
$$\frac{\text{height tree}}{\text{height Bill}} = \frac{\text{shadow tree}}{\text{shadow bill}}$$

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

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

$$x = 5.2$$

Solve for BA

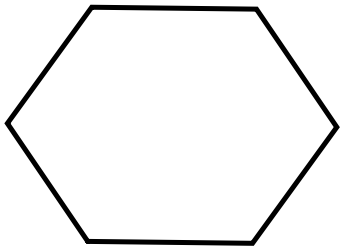


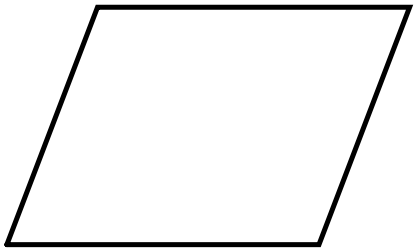
?

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

$\frac{BA}{2} =$

Lines of Symmetry



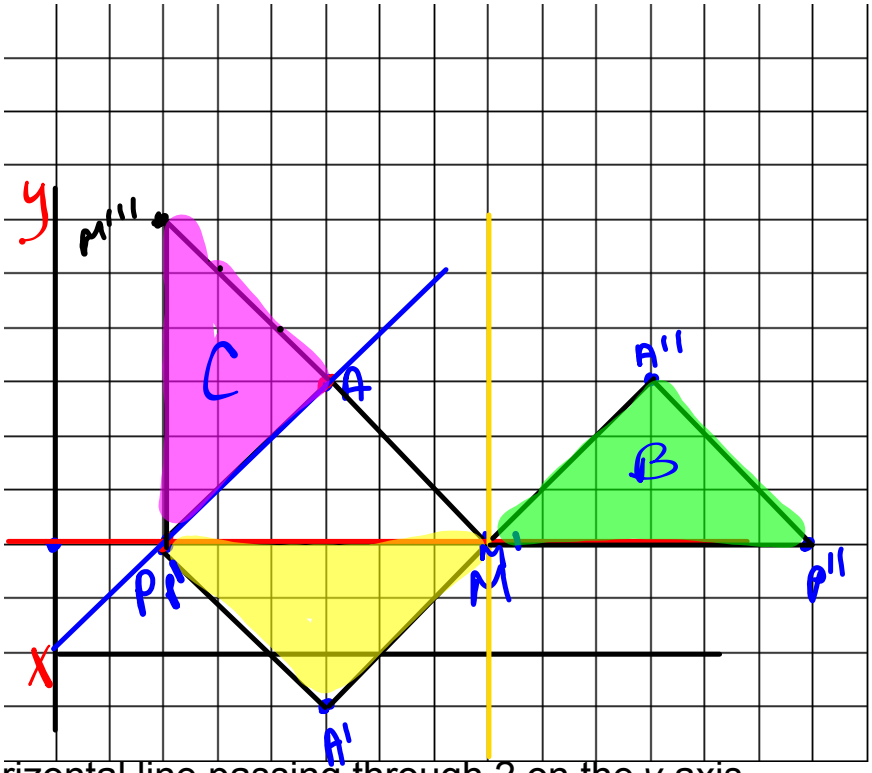


Plot the points:

P (2, 2)

A (5, 5)

M (8, 2)

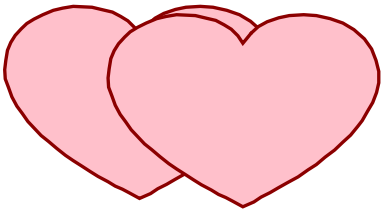


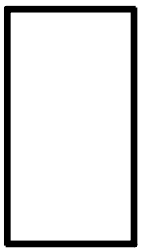
a) Reflect ΔPAM in the horizontal line passing through 2 on the *y*-axis.
b) Reflect ΔPAM in the vertical line passing through 8 on the *x*-axis.
c) Reflect ΔPAM in the oblique line passing through the points (2, 2) and (5, 5).

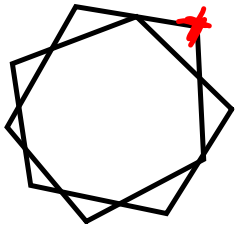
Rotational Symmetry

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

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







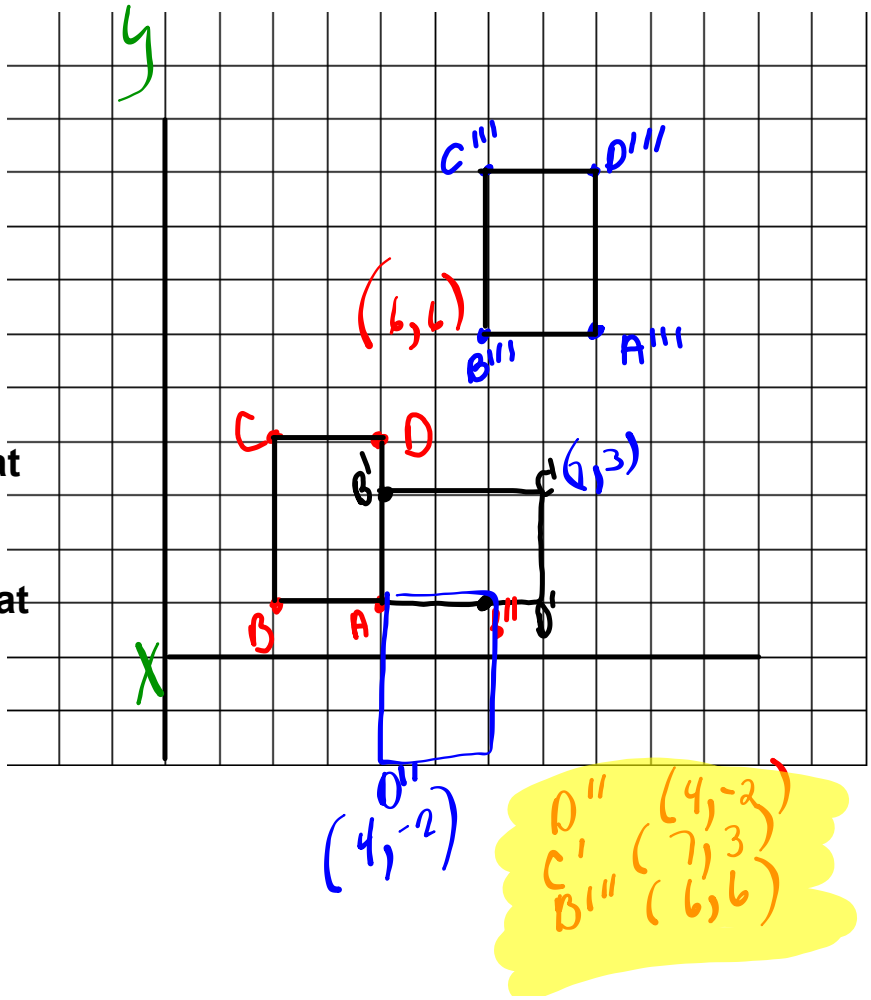
Plot

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



D'' (4,-2)
C' (7,3)
B'' (6,6)