Warm-Up

June 5, 2019

1. Is the following a linear relation? if yes write the equation and describe the relationship.

x	y
0	-1
1	2
2	5
3	8

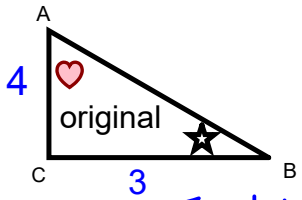
+3, +3, +3

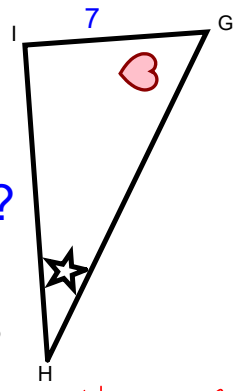
$y = 3x - 1$

As x increases by 1, y increases by 3.

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?

$\angle ACB = \angle GIH$
$\angle CBA = \angle IHG$
$\angle BAC = \angle HGI$

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

$\frac{?}{3} = \frac{GH}{AB} = \frac{7}{4}$ ← Ratio S.F. (1.75)

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

$HI = \frac{21}{4}$

$HI = 5.25$

$\frac{3}{x} = \frac{4}{7}$ ← PT: just cuz

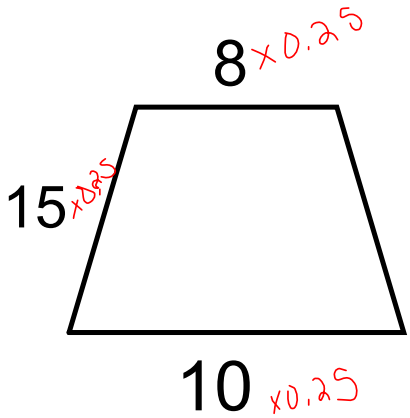
$\frac{x}{3} = \frac{7}{4}$

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

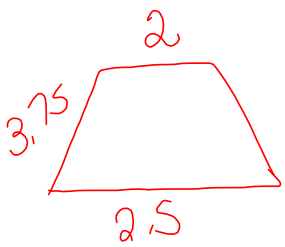
↳ 0.25

B. Is this a reduction or enlargement?

study

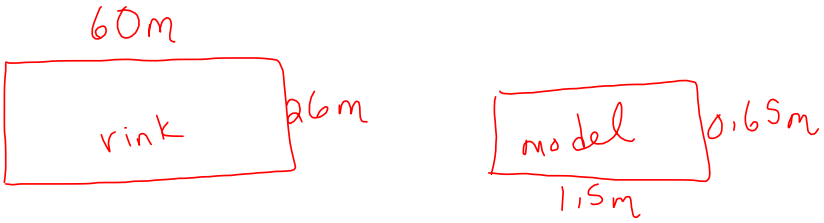


New lengths = S.F x original



#3. A hockey rink measures 60 m by 26 m. A model of a hockey rink measures 1.5 m by 0.65 m?

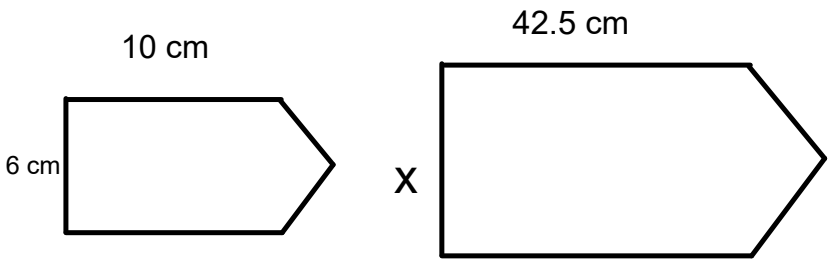
What is the scale factor?



	Long / Long	Short / Short
model / original	1.5 / 60	0.65 / 26

S.F. 0.025

These polygons are similar
Solve for x



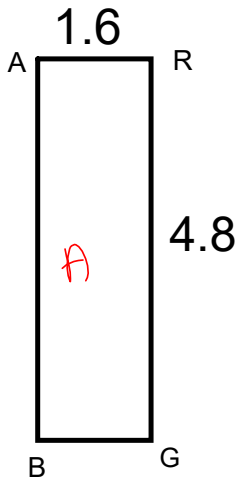
Set up Ratios

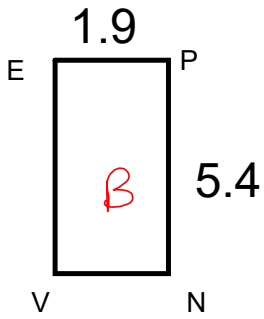
$$\frac{x}{6} = \frac{42.5}{10}$$ (6)

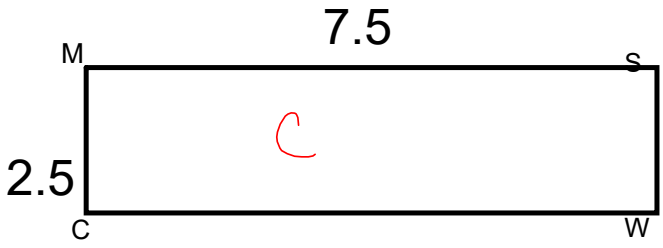
$$x = \frac{255}{10}$$

$$x = 25.5$$

Are these Rectangles similar?







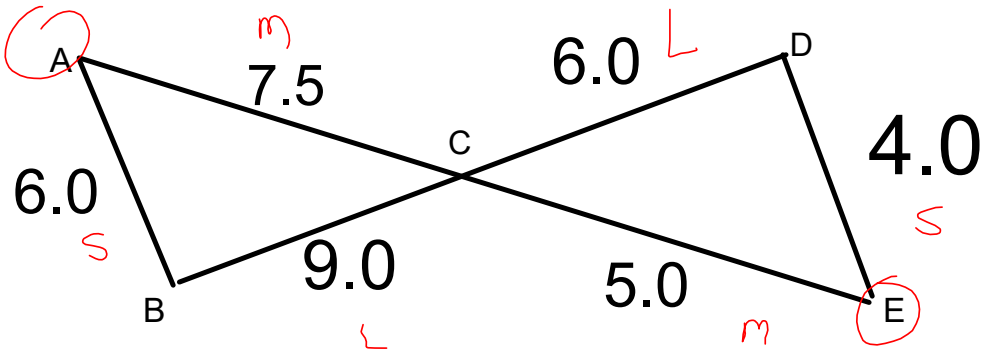
	Long / Long	Short / Short
$\frac{A}{B}$	$\frac{4.8}{5.4} = 0.89$	$\frac{1.6}{1.9} = 0.84$ X
$\frac{B}{C}$	$\frac{5.4}{7.5} = 0.72$	$\frac{1.9}{2.5} = 0.76$ X
$\frac{A}{C}$	$\frac{4.8}{7.5} = 0.64$	$\frac{1.6}{2.5} = 0.64$ ✓

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

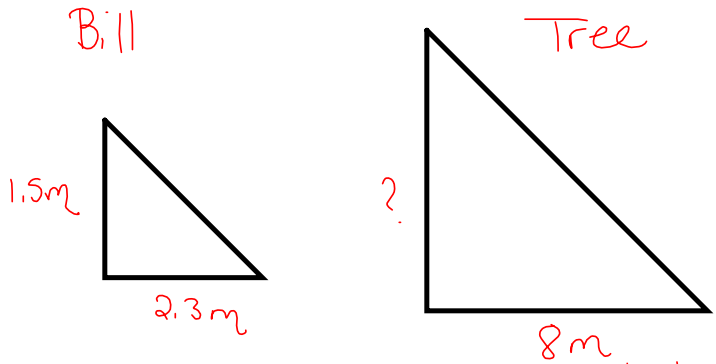
$$\frac{AB}{ED} = \frac{CB}{CD} = \frac{AC}{EC}$$

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

$$1.5 = 1.5 = 1.5$$

Scale factor?

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



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

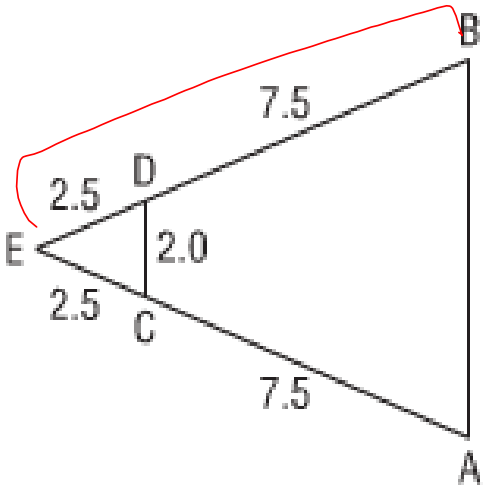
$$\frac{8}{2.3} = \frac{x}{1.5}$$

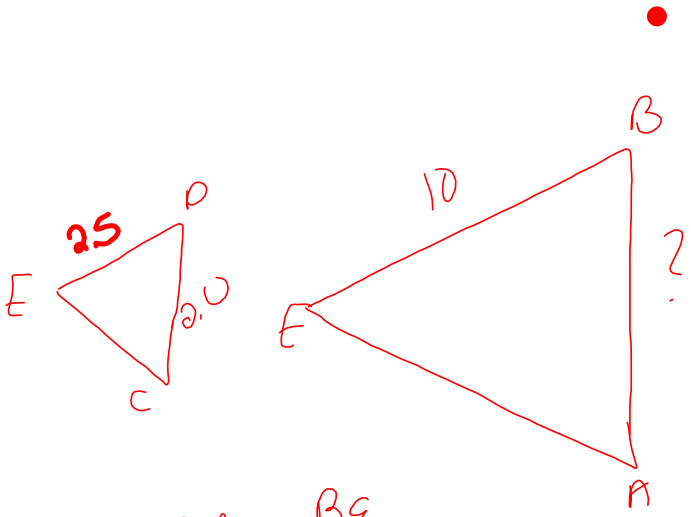
$$\frac{x}{1.5} = \frac{8}{2.3} \quad (1.5)$$

$$x = \frac{12}{2.3}$$

$$x = 5.22\ m$$

Solve for BA



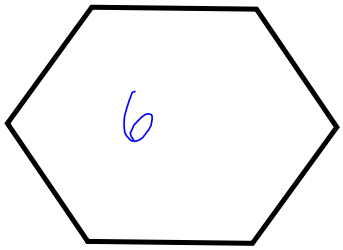


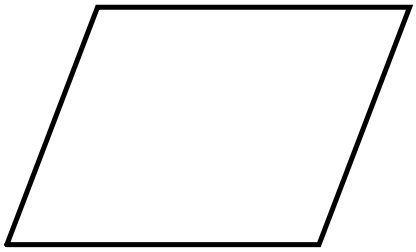
$$\frac{BA}{DC} = \frac{BE}{DE}$$

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

$$BA = 8$$

Lines of Symmetry





None

How many lines of symmetry?

Plot the points:

P (2, 2)

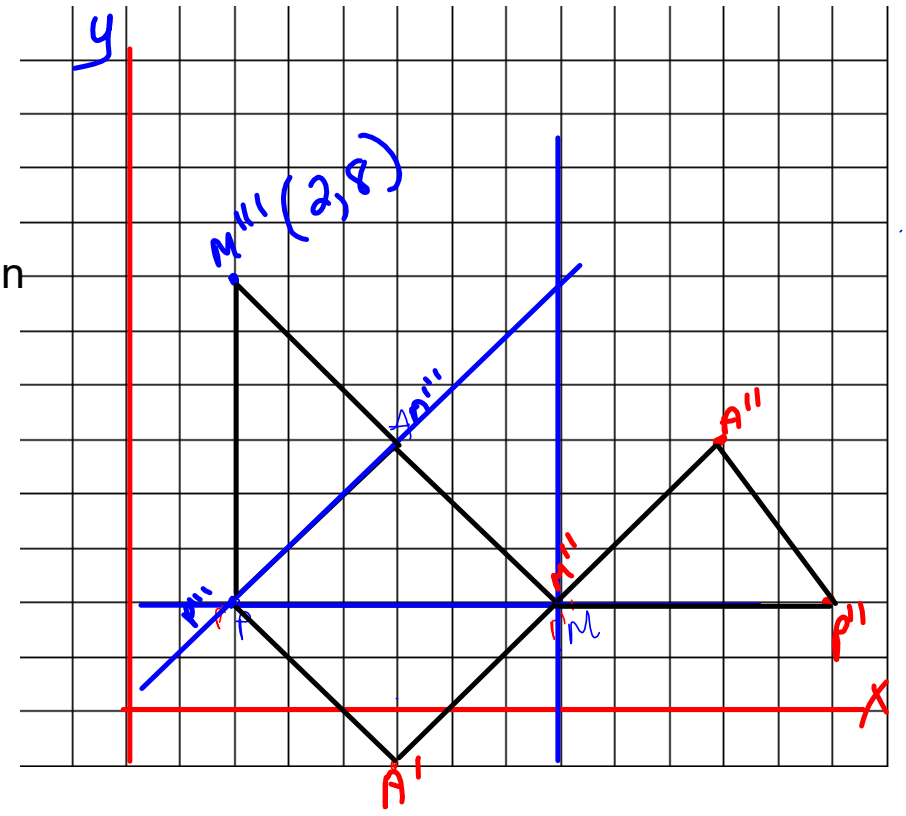
A (5, 5)

M (8, 2)

#1 Line of reflection 2 on y axis

#2 Line of reflection 8 on x axis

#3 through points (2,2) and (1,1)



Plot the points:

P (2, 2)

A (5, 5)

M (8, 2)

#1

Line of reflection 2 on y axis

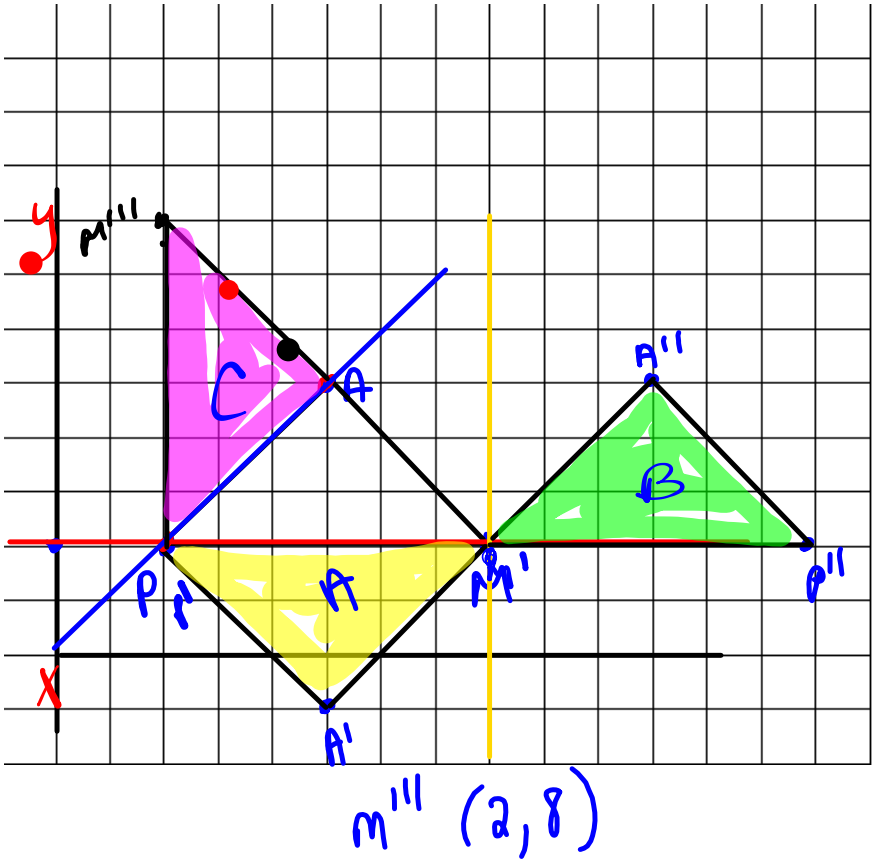
#2

Line of reflection

8 on x axis

#3

(2,2) and (1,1)

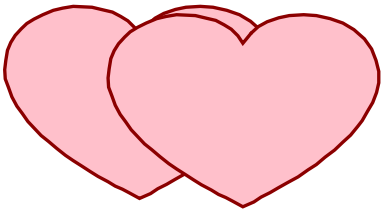


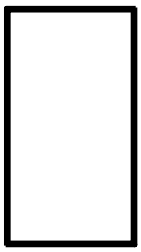
Rotational Symmetry

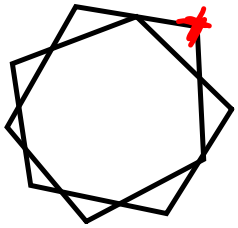
- The number of times a shape coincides with itself, during rotation of 360, **ORDER OF ROTATION!**

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

study







origin...(0,0)

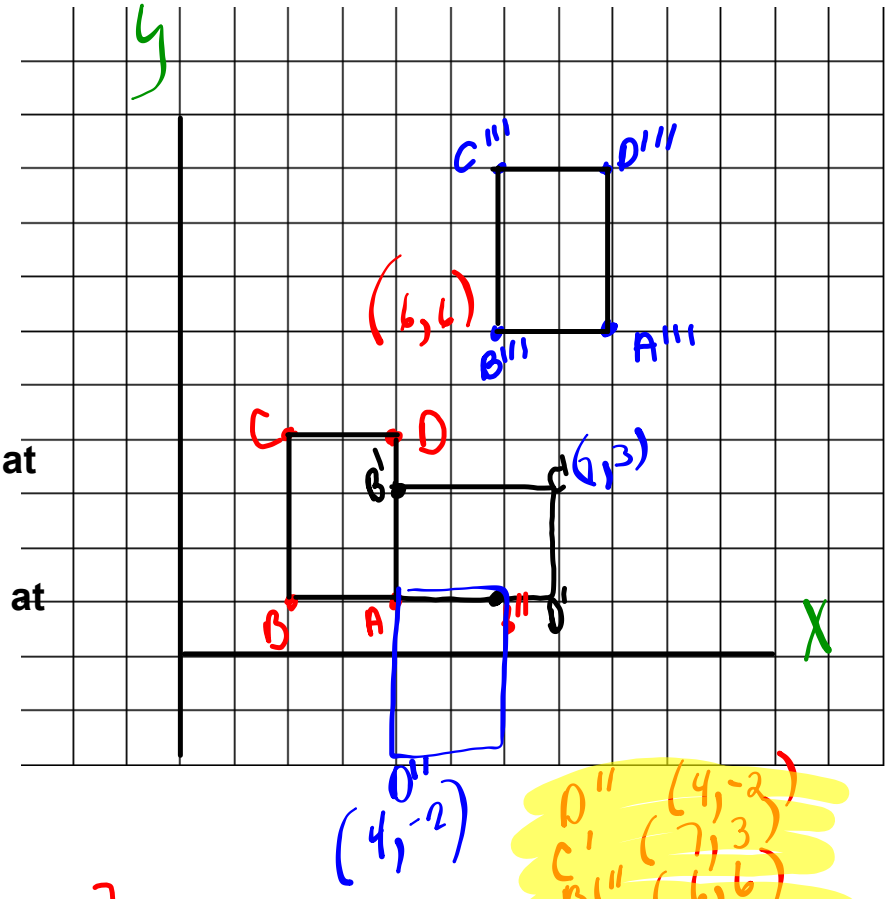
Plot

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)

Homework 1-22
Omit #16
Write on sheets [show work]

HW Ques 1-22

Mark on sheets!