

DAY 4 - STUDY GUIDE - SIMILARITY AND DILATIONS

9.6 DILATIONS

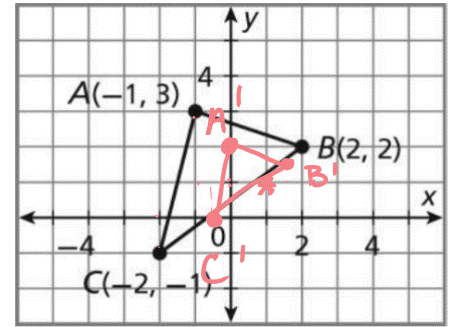
✓ I can identify and draw translations..... YES or NO?

Plot and label the image triangle A'B'C'

a) Dilate ABC with a scale factor of $-1/2$ with center (1, 1)

A' (0 , 2) B' (1.5 , 1.5) C' (-0.5 , 0)

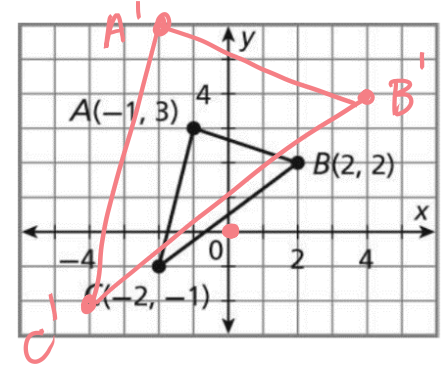
Before	After
A <-2, 2>	A' <-1, 1>
B <1, 1>	B' <1/2, 1/2>
C <-3, -2>	C' <-3/2, -1>



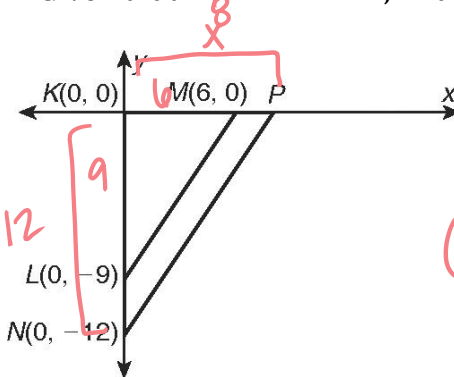
b) Dilate ABC with a scale factor of 2 with center (0, 0)

A' (-2 , 6) B' (4 , 4) C' (-4 , -2)

B	A
A (-1, 3)	A' (-2, 6)
B (2, 2)	B' (4, 4)
C (-2, -1)	C' (-4, -2)



2. Given that $\triangle LKM \sim \triangle NKP$, find the coordinates of P and the scale factor.



① $SF = \frac{9}{12} = \left(\frac{3}{4}\right)$

② $\frac{3}{4} = \frac{6}{x}$

$3x = 24$

$x = 8$ P(8, 0)

7.2: RATIOS IN SIMILAR POLYGONS

✓ I can identify similar polygons and apply properties of similar polygons to solve problems.

✓ I can set up and solve proportions!

1. Similar polygons are polygons in which the corresponding sides are proportional and the corresponding angles are \cong .

2. Solve each proportion:

a) $\frac{2}{3} = \frac{x}{24}$

$3x = 48$
x = 16

b) $\frac{2x+5}{10} = \frac{42}{20}$

$20(2x+5) = 420$
 $40x + 100 = 420$
 $40x = 320$ x = 8

c) $\frac{3x-6}{2} = \frac{4x-2}{4}$

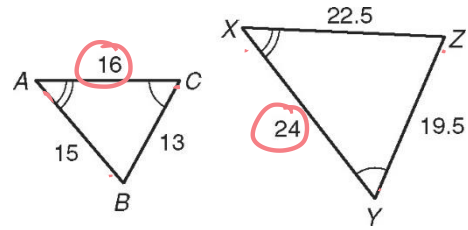
$2(4x-2) = 4(3x-6)$
 $8x-4 = 12x-24$
 $20 = 4x$
x = 5

2) Give the similarity ratio and write a similarity statement.

Ratio: $2:3$ or $\frac{2}{3}$

Similarity Statement: $\triangle CAB \sim \triangle YXZ$

$$\frac{16}{24} = \frac{2}{3}$$



3. Given: $\triangle JLM \sim \triangle QST$ Ratio = 2:1

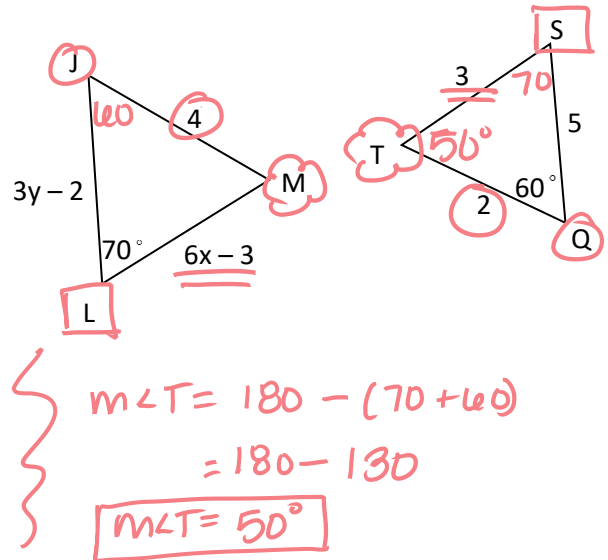
a) Find x, y, and $m\angle T$.

$$\frac{6x-3}{3} = \frac{4}{2} \Rightarrow 18 = 12x \Rightarrow \frac{3}{2} = x$$

$$\frac{3y-2}{5} = \frac{4}{2} \Rightarrow 20 = 2(3y-2) \Rightarrow 20 = 6y-2 \Rightarrow 22 = 6y \Rightarrow y = \frac{11}{3}$$

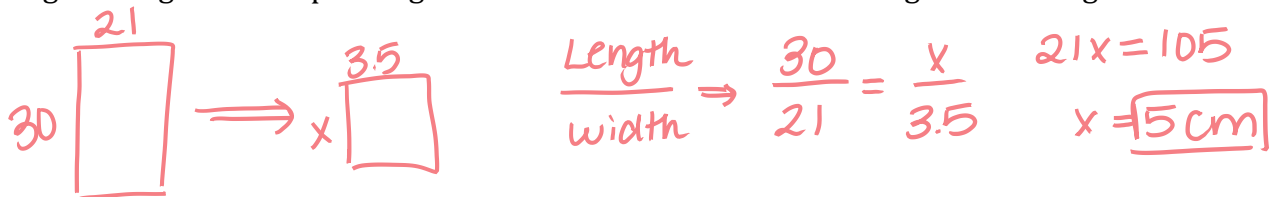
b) What is the ratio of the sides?

2:1



APPLICATIONS:

4. Leonardo da Vinci's famous portrait the Mona Lisa is 30 in. long and 21 in. wide. Miss Palumbo went to Paris and got a magnet of the painting that is 3.5 cm wide. What is the length of the magnet?



5. Lady Liberty holds a tablet in her left hand. The tablet is 7.19 m long. If you made a scale drawing using the scale 1 cm : 0.75 m, what would be the dimensions of the length to the nearest tenth?

$$\frac{1 \text{ cm}}{0.75 \text{ m}} = \frac{x}{7.19} \Rightarrow 0.75x = 7.19 \Rightarrow x \approx 9.59 \approx 9.6 \text{ cm}$$

SELF REFLECT: What section was the easiest for you? _____ Most challenging? _____

What are you going to do to study for the quiz?! _____