Name: _____ Date: Feb 6 Hour: 6th Alg I

Unit 6A: Day 1 and 2: The Vocabulary of Transformations

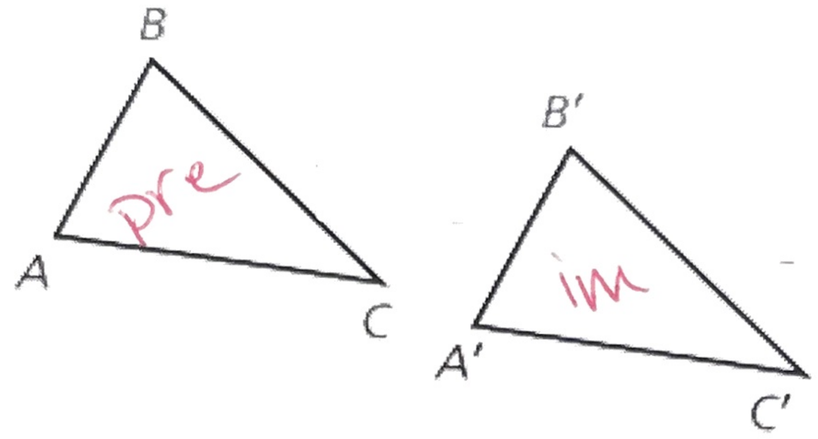
Focus Question: What are the isometries we will study?

A. The Importance of Vocabulary

Use the google slides presentation to understand why its important that we learn all the vocabulary!

B. The Words

1. **Transformation**: a change made to a figure's, size, shape, location, or orientation
2. **Pre – Image**: The figure before the transformation (Is what you are used to seeing!)
3. **Image**: The figure after the transformation (Will be indicated using "primes")

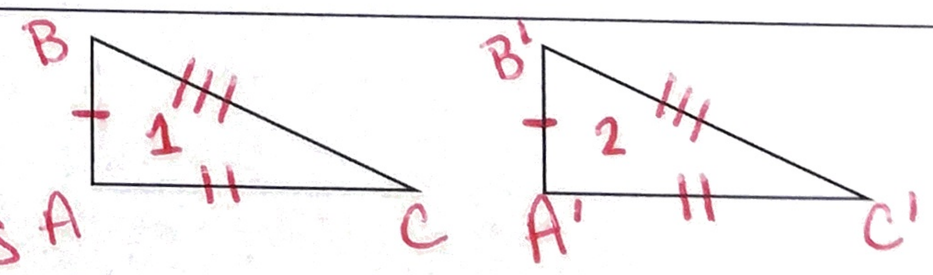
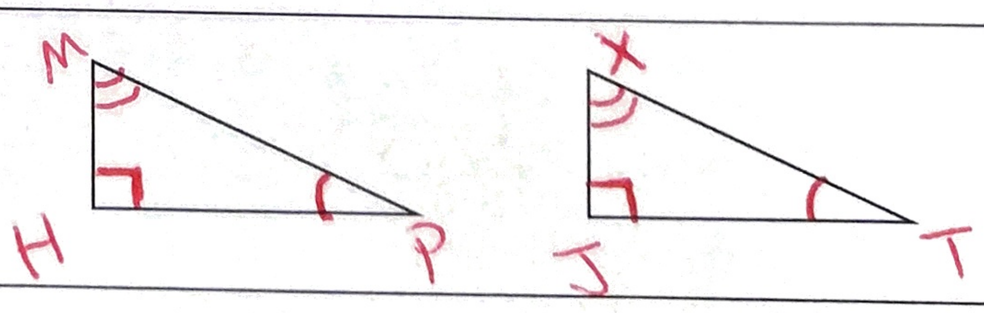


When we see A' we say
"A prime"

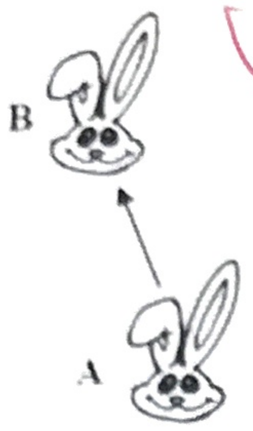
When we see B' we say
"B prime"

4. **Congruent or Non-Congruent**

Word	**Congruent**	**Non-Congruent** (Not)
Definition	same shape & same size	Not the same shape or size
Example(s)	○○ ▯▭ △△	○◦ □▯ △▷

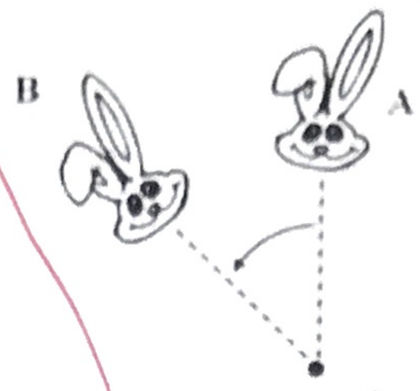
The symbol for congruent is ≅		**A way to write two triangles are congruent is** $\Delta_1 \cong \Delta_2$ $\Delta ABC \cong \Delta A'B'C'$
	Definition	Marked on a picture
Congruent Segments (part of a shape or line)	Segments that are the same length Indicated by: tickmarks	
Congruent Angles	Angles that have the same measure Indicated by: arcs	

$\Delta HMP \cong \Delta JXT$

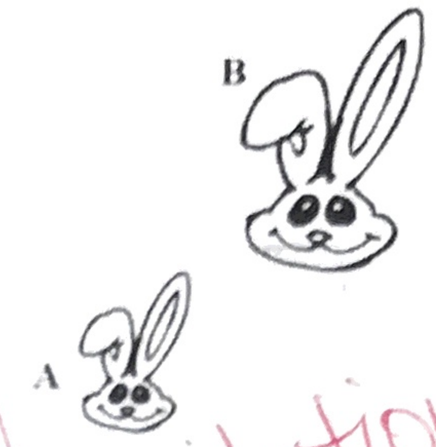


Translation

Reflection



Rotation



Dilation

Word	Definition	One word definition	What it requires to perform
5. Translation	when a figure moves in a direction a certain distance	move or slide or relocate	direction & distance
6. Reflection	a mirror image created by flipping over a line	mirror or flip	a line
7. Rotation	a turn around a center point a given # of degrees	turn or spin or reverse	a center, a degree, & a direction
8. Dilation	a change made to the size of a figure	shrink enlarge grow expanded resize	center & scalefactor

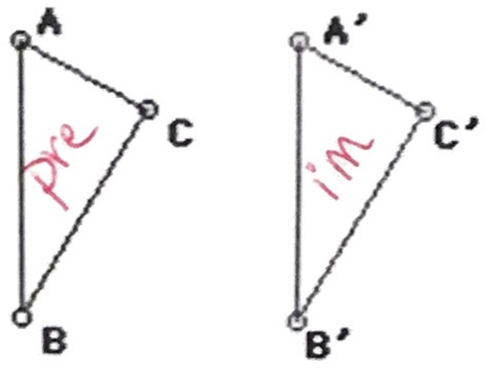
9. **Rigid tranformation or Isometry**: A transformation that does NOT change the size.

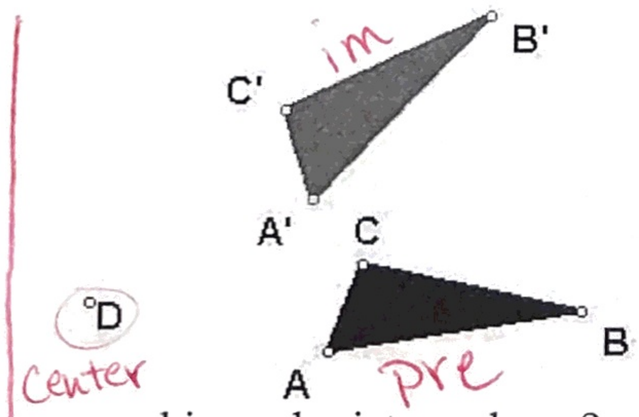
There are three isometries, they are translation, reflection, and rotation.

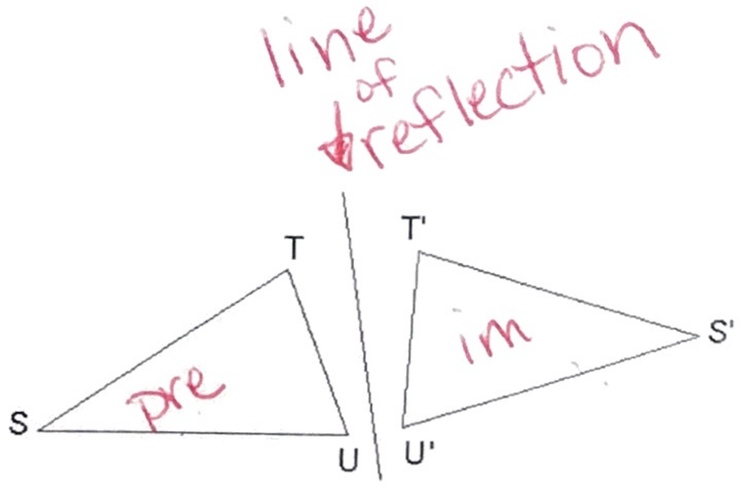
We will look at each transformation in more detail as we go through the unit. Right now we will practice what we have learned.

C. Use what you've learned

1. Label the pre-image and image in each picture below.







2. What transformation occurred in each picture above?

Translation

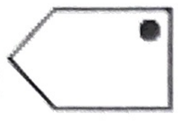
Rotation

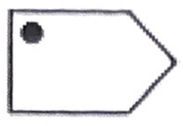
Reflection

Patty Paper

3. Choose the correct answer to each question below.

Reflection of  ?

a) 

b) 

c) 

Translation of  ?

a) 

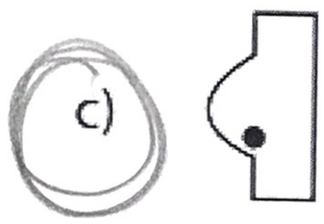
b) 

c) 

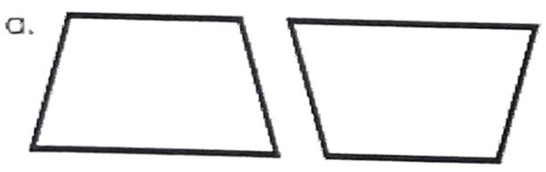
Rotation of  ?

a) 

b) 

c) 

4. Write congruent or not congruent for each. If one of the 4 transformations occurred, identify it.

a. 

≅ Rotation

b. 

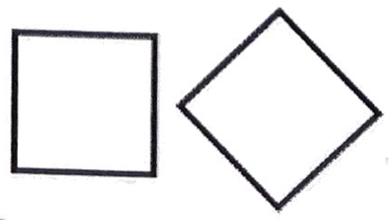
Not ≅ Dilation

c. 

≅ Could be any Refl, Rot, or Transl.

d. 

Not ≅

e. 

≅ Rotation

f. 

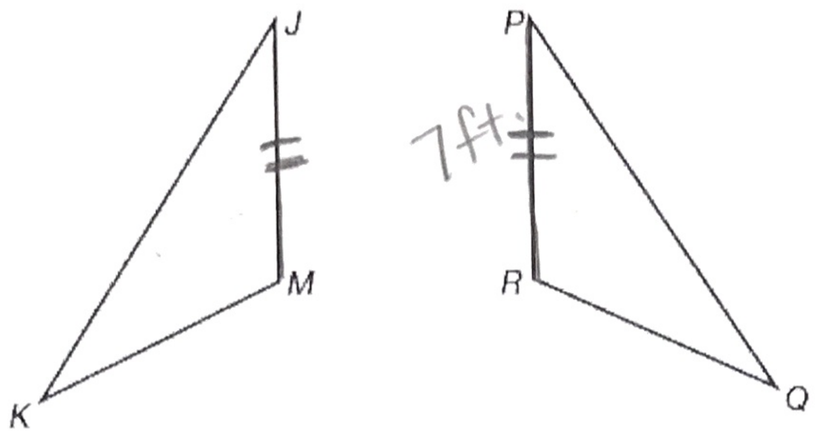
Not ≅

Δ: delta
Δ: triangle

$9.\overline{8}$: Repeating

$\overline{PR}$: segment

5. Mark the picture to show that segment PR and segment JM are congruent. Then, write it in symbolic notation.

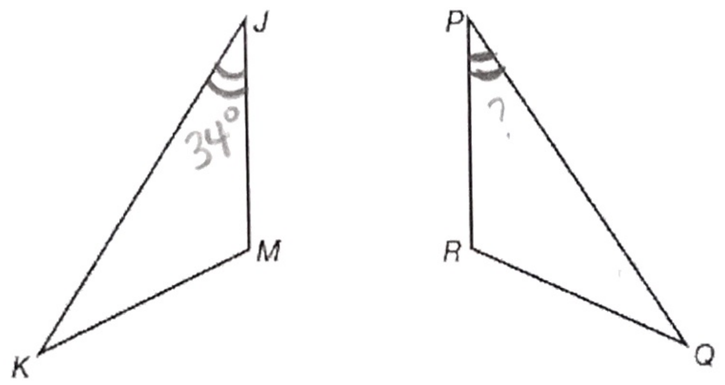


Symbolic notation:

$\overline{PR} \cong \overline{JM}$

6. If PR is 7 feet, how long is JM? 7ft. because they are $\cong$

7. Mark the picture to show that angle J is congruent to angle P. Then, write it in symbolic notation.



Symbolic notation:

$\angle J \cong \angle P$

$\angle MJK \cong \angle RPQ$

8. If $m\angle J = 34°$ then what is $m\angle P$? 34° because they are $\cong$.