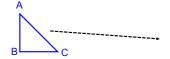
Today you will need:	
A transformation packet (by the door)	
2. Your notes (open to a new page)	
3. Your book	
5. Tour 200K	
There are RETAKE packets by the door as well for those who need	
one.	
Lesson 1.3 - Introduction to Transformations	
Key concepts: What is a transformation?	
Transforming using coordinate notation.	
Pre-Image v. Image. Rigid v. non-rigid motion.	
What is a transformation?	
A transformation means changing one, some, or all of the following: 1. Size	
2. Shape	
3. Position	

When transforming a shape, we say we are beginning with a "Pre-Image", and ending with an "Image".



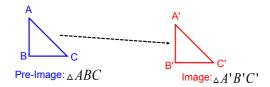
Pre-Image: $\triangle ABC$

When transforming a shape, we say we are beginning with a "Pre-Image", and ending with an "Image".

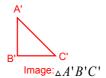


Pre-Image: $\triangle ABC$

When transforming a shape, we say we are beginning with a "Pre-Image", and ending with an "Image".

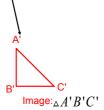


When transforming a shape, we say we are beginning with a "Pre-Image", and ending with an "Image".



An "Image" is often written with prime notation:

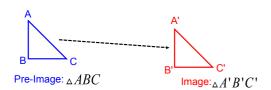
The image of point A is point A'



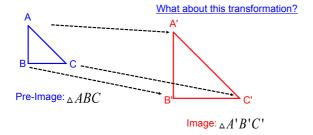
Some transformations do NOT change the size and shape of an object. These are called RIGID MOTIONS.

A RIGID MOTION is a transformation that preserves:

- 1. shape
- 2. size



Is this transformation a rigid motion?

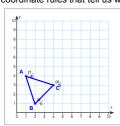


Some transformations DO change the size and shape of an object. These are called NON-RIGID MOTIONS.

A NON-RIGID MOTION is a transformation that changes EITHER:

- 1. shape
- 2. size

Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.

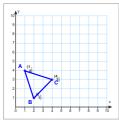


```
Transform pre-image ABC to image A'B'C' using the following coordinate notation:
```

 $(x,y) \longrightarrow (x+4, y+2)$

A(1,4)A'()
B(2,1)B'()
C(4.3)C'()

Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.

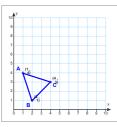


Transform pre-image ABC to image A'B'C' using the following coordinate notation:

$$(x,y) \longrightarrow (x + 6, y - 1)$$

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

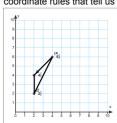
Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.



Transform pre-image ABC to image A'B'C' using the following coordinate notation: $(x,y) \longrightarrow (2x, 2y)$

A(1,4)	A'()
B(2,1)	B'()
C(4.2)	CV	

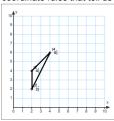
Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.



Transform pre-image ABC to image A'B'C' using the following coordinate notation: (x,y) →(1/2x, 1/2y)



Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.

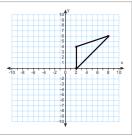


Transform pre-image ABC to image A'B'C' using the following coordinate notation:

$$(x,y) \longrightarrow (2x, y)$$



Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.

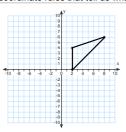


Transform pre-image ABC to image A'B'C' using the following coordinate notation:

 $(x,y) \longrightarrow (-x, y)$

(2,4)	A'(
3(2,0)	B'(
(8,6)	C'(

Transformations on a coordinate plane can be done by using coordinate rules that tell us what we want to transform and how.



Transform pre-image ABC to image A'B'C' using the following coordinate notation: $(x,y) \longrightarrow (-y,\,x)$

A(2,4)......A'()
B(2,0).....B'()
C(8,6).....C'()

Homework:

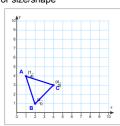
Pages 38 and 39, all problems

Lesson 2.1 - Translations

Key concepts:

Vector Notation versus Coordinate notation

Reminder - translations are slides; change position but not orientation or size/shape

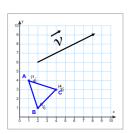


Transform pre-image ABC to image A'B'C' using the following coordinate notation:

 $(x,y) \longrightarrow (x + 6, y + 3)$



There is another way to translate - using VECTORS

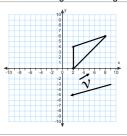


Vector - \vec{v}

Vector notation for a translation: $\langle \chi, y \rangle$ This means, how much to I move in the x direction, and how much to I move in the y direction?

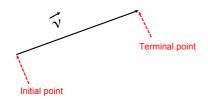


Unlike with slope, the direction of the vector matters! Translate triangle ABC using the vector.



A(2,4).....A'(
B(2,0).....B'(
C(8,6).....C'(

Vector terminology and notation:



Homework:

Page 69, #;s 1-3 and 5-10

Page 70, #'s 12-14
