

# LESSON 9-1/9-2

## Translations & Reflections

2/21/2019

①

Goal: I will be able to recognize and describe the translation and reflection of an object.	Notes & Examples
Transformation	is the change in position, size, or shape of a figure
Translation	moves every point the same distance and direction
Reflection	flips a figure over a line called the line of reflection

②

Example 1	Triangle ABC is translated to triangle A'B'C'.
Note the "prime" symbols to represent the new location of the object.	
a) Describe in words, the translation of each point:	3 units to the left and 1 unit down
b) Use arrow notation to show the movement.	
A	$(2, 2) \rightarrow A'(-1, 1)$
B	$(1, 0) \rightarrow B'(-2, -1)$
C	$(3, -1) \rightarrow C'(0, -2)$
c) Write a rule to describe the translation.	$(x, y) \rightarrow (x-3, y-1)$

③

We try (Do Not Write)	Triangle ABC is translated to triangle A'B'C'.
a) Describe in words, the translation of each point:	2 units to the right and 3 units down
b) Use arrow notation to show the movement.	$(-4, 1) \rightarrow A'(-2, -2)$
c) Write a rule to describe the translation.	$(x, y) \rightarrow (x+2, y-3)$

④

You Try	PQRS is a parallelogram. Describe in words, use arrow notation, and write a rule to describe the translation.
Words	6 units to the right and 2 units up
Arrow	$P(-3, 2) \rightarrow P'(3, 4)$
Rule	$(x, y) \rightarrow (x+6, y+2)$

⑤

You Try (with your group)	Which graph shows $\triangle DEF$ and $\triangle D'E'F'$ , its image after a translation?
No	I.
Yes	II.
No	III.

⑥

Reflections	Triangle ABC is reflected across the y-axis to triangle A'B'C'.
Example 1	a) Describe in words how to map ABC to A'B'C'. $\triangle A'B'C'$ is the image of $\triangle ABC$ after a reflection across the y-axis.
b) Use arrows to show each vertex from ABC to A'B'C'.	

⑦

You Try	PQRS is a rectangle that is reflected. Use words and arrows to show how each vertex maps to its image.
	P'Q'R'S' is a reflection of PQRS across the line $x=1$

⑧

In Your Groups	Describe the transformation of each shape.
I.	
II.	
III.	

⑨

You Try	Create your own shape and draw it on the grid.
a)	Translate it as you wish. Describe the translation in words, arrows, and a rule.
b)	Reflect the shape across a line. Describe in words and arrows the reflection.