Day 1

Intro to Transformations

Target 9: Students will explore reflections, translations, and rotations.

Part I - Warm-Up: What do you already know about graphing?

1. Label the following on the coordinate plane below.

   a) x- axis

   b) y-axis

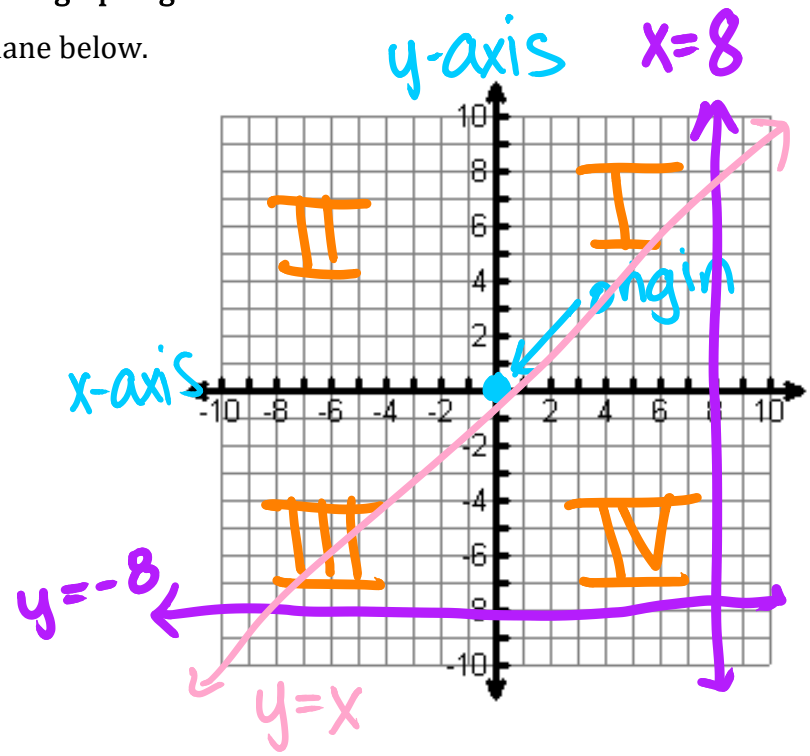
   c) the origin

   d) Quadrants I, II, III, IV

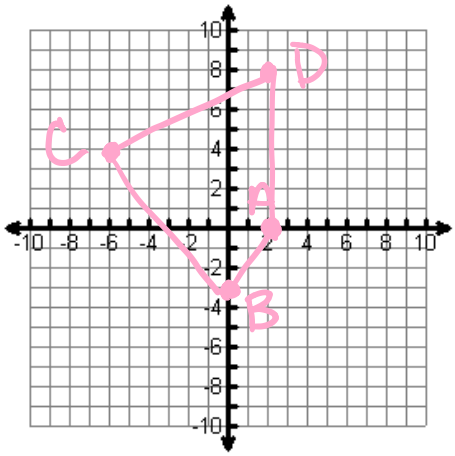
   e) Graph and label the line x = 8.

   f) Graph and label the line y = -8.

   g) Graph and label the line y = x.



2. Graph the following on the coordinate plane below: A (2, 0) ; B (0, - 3) ; C (-6, 4); D (2, 8)



Part II - Vocabulary:

A. Match each term on the left with a definition on the right. Try with your partner first!

1. Image D
2. Preimage E
3. Transformation A
4. Vector C
5. Isometry B

A. a mapping of a figure from its original position to a new position

B. A transformation that does not change the shape or size of a figure

C. A quantity that has both a size and direction (use in translations)

D. The shape that results from a transformation of a figure

E. a shape that undergoes a transformation

Key Vocab: Reflections, translations, and rotations are all forms of isometries. Isometries are also called congruence transformations.

Part III – Think-Pair-Share:

A. What do you think of when you hear the word….
   a. Reflection?
   b. Translation?
   c. Rotation?

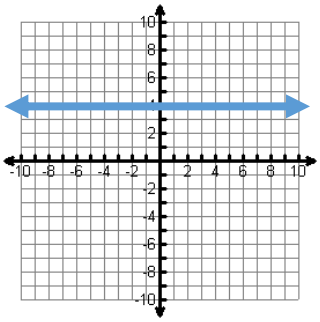
B. Turn to your partner and discuss what you have in common and what are some differences.

   Where do you see these transformations in the real world?

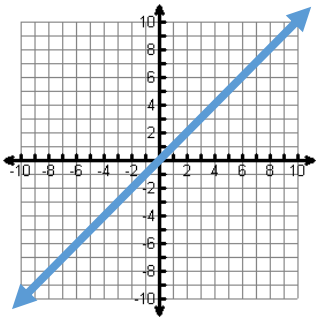
Part IV– Individual Practice with Graphing:

For #1-3, Write the equation of the line.

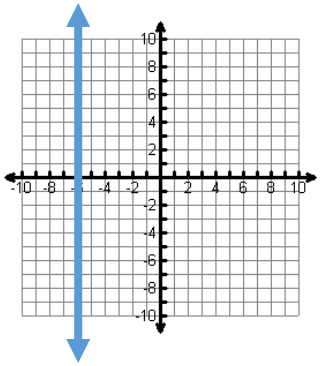
1. $y = 4$



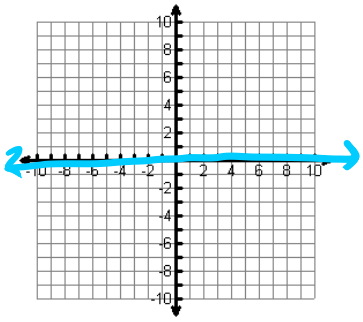
2. $y = x$



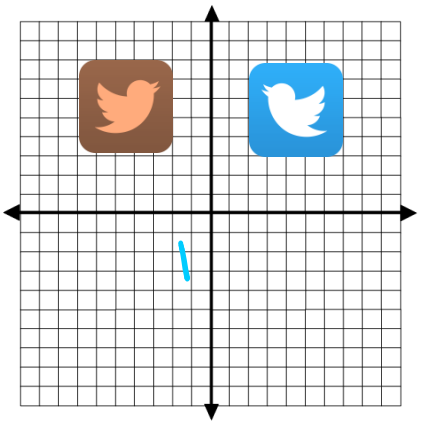
3. $x = -6$



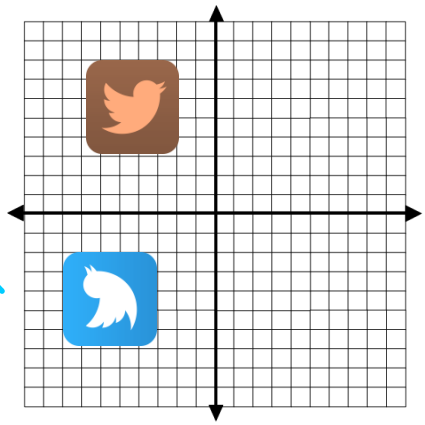
4. Highlight the x-axis below



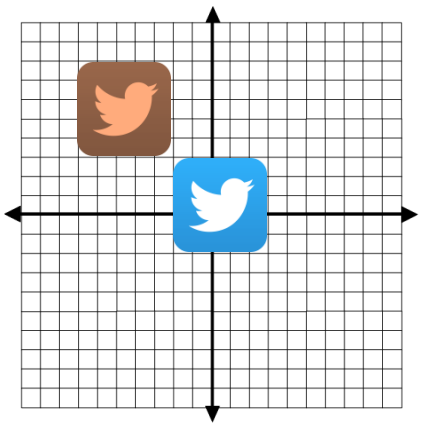
Fast Forward: Let the pre-image be the icon in Quadrant II. Make an educational guess of what type of transformation occurred: Reflection, Translation, or Rotation.



1. Reflection across y-axis



2. Rotation 270° or -90°



3. Translation