GRAPHIC ORGANIZER · SEQUENCES OF RIGID MOTIONS

Translation Sequences: Slide, Then Slide Again

Sequences of multiple translations

Name _____

Period _____

Date _____

Essential question: When you slide a figure more than once, can one single slide do the same job? How do you find it?

$$(x + a, y + b), \text{ then } (x + c, y + d)$$

Step by step

Do the first slide. Label the image with one prime: A′.

Do the second slide to that image. Label it with two primes: A″.

Two moves

One move

Add the x-changes together. Add the y-changes together.

One rule: $(x, y) \rightarrow (x + a + c, y + b + d)$

Same result

What stays the same

Fill in each blank as we find it in class.

- ☐ A sequence of translations can always be replaced by _____ translation.
- ☐ For translations, the order _____ change the final image.
- ☐ The final image is still _____ to the pre-image.

Toolkit

Fill in each blank. Keep this page out while you work.

First slide	Second slide	One rule that does both
(x + 2, y + 1)	(x + 3, y + 4)	(x, y) → (_____, _____)
(x − 4, y + 6)	(x + 1, y − 2)	(x, y) → (_____, _____)
right 5	down 3, then left 2	(x, y) → (_____, _____)
(x + 6, y − 1)	(_____, _____)	(x, y) → (x, y): back where it started

Say it in one sentence: To replace two slides with one, _____ the horizontal changes and _____ the vertical changes.