Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_ Period: \_\_\_\_\_\_ Date: \_\_\_\_\_\_

**2.2A NOTES – Translations**

*Objective: identify translations; translate figures in the coordinate plane. CC.SS.8.G.1/G.2/G.3*

*MP3 Construct Viable Argument HW: 2.2A pg 52 #7-20 all*

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| * A **transformation** changes a figure into another figure. The new figure is called the \_\_\_\_\_\_\_\_.
* A **translation** is a transformation in which a figure \_\_\_\_\_\_\_\_\_\_\_\_. Every point of the figure moves the \_\_\_\_\_\_\_\_\_\_ distance and in the \_\_\_\_\_\_\_\_\_\_ direction.
* PREIMAGE is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ figure in the transformation.
* IMAGE is the \_\_\_\_\_\_\_\_\_\_\_ figure in the transformation.

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| **A’ is read “A prime” Use prime symbols when naming an image.**  | **A ↦ A’****B ↦ B’****C ↦ C’** |

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| **Summary of Translations**

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| --- | --- | --- |
| **Operations** | **Translations** | **Notations** |
| Add to X | Move to the RIGHT | (x, y) ↦ (x + #, y) |
| Subtract from X  | Move to the LEFT | (x, y) ↦ (x – #, y) |
| Add to Y | Move UP | (x, y) ↦ (x, y + #)  |
| Subtract from Y | Move DOWN | (x, y) ↦ (x, y – #) |

 |

*DIRECTIONS: Tell whether the blue figure is a translation of the red figure. EXPLAIN.*

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| **B****R** | **B****R** | **B****R** |

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| Chapter 2, Section 2.2, EXAMPLE 1*Translate Triangle ABC 2 units right and 5 units up. What are the coordinates of the image?**Identify the coordinate notation.* | ON YOUR OWN #4*The vertices of a triangle are* A(-2, 1), B(2, 5), C(1, 2). *Translate Triangle ABC 4 units left and 2 units down. What are the coordinates of the image?**Identify the coordinate notation.* |

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| --- | --- |
| 1. translation: 2 units left and 2 units down Notation Rule: (*x*, *y*) ↦ ( \_\_\_\_\_\_\_, \_\_\_\_\_\_\_)**V:****R:****Y:****V’:****R’:****Y’:** | 2. translation: 1 unit right and 1 unit down Notation Rule: (*x*, *y*) ↦ ( \_\_\_\_\_\_\_, \_\_\_\_\_\_\_)**D:****H:****Y:****D’:****H’:****Y’:** |
| 3. translation: 6 units right and 5 units down Notation Rule: (*x*, *y*) ↦ ( \_\_\_\_\_\_\_, \_\_\_\_\_\_\_)**C:****J:****U:****C’:****J’:****U’:** | 4. translation: 3 units left Notation Rule: (*x*, *y*) ↦ ( \_\_\_\_\_\_\_, \_\_\_\_\_\_\_)**B:****R:****M:****Q:****B’:****R’:****M’:****Q’:** |
| 5. Create your own translation: Provide a rule. Graph the Pre-Image and Image.***Written Rule:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***Notation Rule:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Image result for graph | 6. Create your own translation: Provide a rule. Graph the Pre-Image and Image.***Written Rule:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***Notation Rule:*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Image result for graph |

YouTube video with all transformations

<https://www.youtube.com/watch?v=VJTxv-tRKj0>