|  |  |
| --- | --- |
| **Transformations: KEEP SHEET** | |
|  | |
| **Translations (slide):**   * **Maintains the way the shape is facing, the shape, the size of the shape, the length of the sides, and the size of the angles.** | * Left (-) or Right (+) affects the x-value. * Up (+) or Down (-) affects the y-value. |
| **Reflections (flip):**   * **Flips the way the shape is facing. Maintains the shape, the size of the shape, the length of the sides, and the size of the angles.** | * Over the x-axis; (x, y) → (x, -y) * Over the y-axis; (x, y) → (-x, y) * Over the line y = x; (x, y) → (y, x) * Over a given line; line will go through the coordinate.   + Example: y = 2 horizontal through the point (0, 2), all y-values on the line are equal to 2.   + Example: x = 2 horizontal through the point (2, 0), all x-values on the line are equal to 2. |
| **Rotations (turn):**   * **Turns the way the shape is facing. Maintains the shape, the size of the shape, the length of the sides, and the size of the angles.** | * 90⁰ counterclockwise: (x, y) → (-y, x) * 180⁰ clockwise/counterclockwise: (x, y) → (-x, -y) * 270⁰ counter clockwise: (x, y) → (y, -x) |
| **Dilations (grow or shrink, resize):**   * **Resizes the shape. Maintains the shape and the measure of corresponding angles, but changes the size of the shape and the length of the sides.** | * Scale Factor = n * Rule: (n∙x, n∙y) |
| **Definitions** | |
| **Congruent –** exact same measures. Congruent figures will have congruent corresponding angles, congruent corresponding sides, be the same shape, and be the same size.  **Similar** – has congruent corresponding angle measures, proportional side lengths, the same shape, but a different size image.  **Neither** – the angles DO NOT share the same measures. | |