Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Transformations Review

1. **Matching:** Match the terms in the left column with the correct definitions or examples in the right column.

|  |  |  |
| --- | --- | --- |
| 1. \_\_\_\_\_ | Reflection | a. (x, y) |
| 2. \_\_\_\_\_ | Translation | b. reducing or enlarging a figure on a coordinate plane |
| 3. \_\_\_\_\_ | Rotation | c. a turn that moves 1 quadrant |
| 4. \_\_\_\_\_ | X axis | d. the same direction as a clock |
| 5. \_\_\_\_\_ | Y axis | e. moving a figure by *flipping* it in a coordinate grid |
| 6. \_\_\_\_\_ | Dilation | f. the vertical axis (up and down) |
| 7. \_\_\_\_\_ | Coordinate plane | g. a numbered grid with x and y axis |
| 8. \_\_\_\_\_ | 90 degree rotation | h. moving a figure by *sliding* it in a coordinate grid |
| 9. \_\_\_\_\_ | Clockwise | i. the horizontal axis (across) |
| 10. \_\_\_\_\_ | Ordered Pair | j. moving a figure by *turning* it in a coordinate grid |

List the x,y rule to find the following coordinates. Discuss how you would solve a transformation with these rules (written or verbally)

1. Translation of 7 left and 4 down
2. Translation of 3 right and 5 up
3. Reflection on the x-axis
4. Reflection on the y-axis
5. 90° clockwise rotation
6. 90° counterclockwise rotation
7. 180° rotation
8. Dilation of 1/3
9. Dilation of 4

**II. Application:**

* On the coordinate grids provided, transform the figures as directed.
* Use prime notation to label each point on the coordinate grid.
* Write the ordered pairs for the coordinates of the new image below for each problem.

Plane 1 - **Translate** triangle ABC *x-4, y+1*.

A’ \_\_\_\_\_\_\_\_\_\_ B’ \_\_\_\_\_\_\_\_\_\_ C’ \_\_\_\_\_\_\_\_\_\_

Plane 2 - **Reflect** trapezoid DEFG over the *x axis*.

D’ \_\_\_\_\_\_\_\_\_\_ E’ \_\_\_\_\_\_\_\_\_\_ F’ \_\_\_\_\_\_\_\_\_\_ G’ \_\_\_\_\_\_\_\_\_\_

Plane 3 - **Rotate** parallelogram HIJK over the *180 degrees*.

H’ \_\_\_\_\_\_\_\_\_\_ I’ \_\_\_\_\_\_\_\_\_\_ J’ \_\_\_\_\_\_\_\_\_\_ K’ \_\_\_\_\_\_\_\_\_\_

Plane 4 - **Dilate** square LMNO by a scale factor of 2.

L’ \_\_\_\_\_\_\_\_\_\_ M’ \_\_\_\_\_\_\_\_\_\_ N’ \_\_\_\_\_\_\_\_\_\_ O’ \_\_\_\_\_\_\_\_\_\_

Plane 5 - **Rotate** rectangle PQRS *90 degrees clockwise* about the origin.

P’ \_\_\_\_\_\_\_\_\_\_ Q’ \_\_\_\_\_\_\_\_\_\_ R’ \_\_\_\_\_\_\_\_\_\_ S’ \_\_\_\_\_\_\_\_\_\_

Plane 6 - **Dilate** square TUVW *by a scale factor of ½* .

T’ \_\_\_\_\_\_\_\_\_\_ U’ \_\_\_\_\_\_\_\_\_\_ V’ \_\_\_\_\_\_\_\_\_\_ W’ \_\_\_\_\_\_\_\_\_\_

Plane 7 - **Plot** triangle XYZ on the coordinate grid using the following coordinates:

X (-4, 4) Y (-4, -2) Z (-1, -2)

Reflect the figure over the y-axis, then translate x-2, y+1.

Plane 8 – The pre-image and image have been graphed. Explain the transformations that were applied to get to the image.

1

2





A

B

C

D

E

F

G

4

3

L

M

N

O

H

I

J

K



6

5

U

T

Q

P

W

V

S

R

8

7



**IMAGE**

**PRE-IMAGE**