Final Exam Review - Unit 5

Name Class Period

| What you need to know \& be able to do | Things to remember | Problem | Problem |
| :---: | :---: | :---: | :---: |
| Translations | - Find the new coordinates by adding/ subtracting the given value. <br> - Find the pre-image by doing the OPPOSITE. | 1. Translate the following points by the rule: $\begin{aligned} & x, y \rightarrow x+1, y-4 \\ & S(-5,2) \rightarrow \\ & Y(-4,5) \rightarrow \\ & R(-1,1) \rightarrow \\ & \mathrm{A}(-4,-2) \rightarrow \end{aligned}$ | 2. Translation: $(x, y) \rightarrow(x-2, y-6)$ $W(3,2) \quad C(2,4) \quad T(3,5) \quad Z(5,2)$ |
| Reflections | - Reflection over x-axis: ( $\mathrm{x},-\mathrm{y}$ ) <br> - Reflection over $y$-axis: (-x, y) <br> - Reflection over $\mathrm{y}=\mathrm{x}$ : ( $y, x$ ) <br> - Reflections over $\mathrm{y}=-\mathrm{x}$ : ( $-\mathrm{y},-\mathrm{x}$ ) <br> - Reflection over any other line: PROTECT THE DISTANCE | 3. Reflection over $y=x$ | 4. Reflection over $y=-3$ |
| Rotations | - 90CW/270CCW: $(y,-x)$ <br> - 180: (-x, -y) <br> - 90CCW/270CW: $(-y, x)$ | 5. Rotate the figure 90 CW | 6. Rotate the figure 90 CCW |
| Dilations | - Multiply the coordinates by the given scale factor (k) | 7. Find the coordinates of the new vertices of the image that has been dilated by a factor of 5 . $\begin{aligned} & \mathrm{S}(-5,2) \rightarrow \\ & \mathrm{Y}(-4,5) \rightarrow \\ & \mathrm{R}(-1,1) \rightarrow \\ & \mathrm{A}(-4,-2) \rightarrow \end{aligned}$ | ```8. Find the coordinates of the new vertices of the image that has been dilated by a factor of 1/2. W}(3,2) C}(2,4) T (3,5)-> Z (5, 2) }``` |


| Glide <br> Reflections and Combinations of Transformations | - Glide Reflection: Translation and Reflection <br> - Rotation and Reflection <br> - ORDER IS IMPORTANT <br> - Use the previous ordered pairs to do the next transformation. | 9. Given the points $M(-3,1) \quad S(5,-2)$ <br> Translate: $(x-3, y+2)$ <br> Reflect: $y=-x$ <br> $M^{\prime} \rightarrow$ <br> $S^{\prime} \rightarrow$ <br> $M^{\prime \prime} \rightarrow$ <br> $S^{\prime \prime} \rightarrow$ | ```10. Given the points K (0, -4) P(-6,-3) R (1, 2) Reflect: over the x-axis Rotate: 270 CCW K' } P'} R' } K''  P''} R'' }``` |
| :---: | :---: | :---: | :---: |
|  | - Even = Reflection over the $y$-axis OR all even exponents (don' $\dagger$ | 11. $f(x)=5 x^{3}-2 x$ | 12. $f(x)=-3 x^{4}+2 x^{2}+x-2$ |
| Even, Odd or Neither | forget constants) <br> - $\operatorname{Odd}=180^{\circ}$ Rotation through the origin OR all odd exponents (don't forget x ) | 13. | 14. |
| Solving Isometries | - Set congruent parts equal to each other to solve for the given variables | 15. | 16. |

