## Geometry Chapter 4 In Class Review

1. Use the translations $T:(x, y) \rightarrow(x-3, y+1)$ and $S:(x, y) \rightarrow(3 x, 3 y)$.
a) Find $T$ : $(-2,5)$
b) Find S : $(2,-1)$
c) What is the preimage of $(3,-2)$ under $T$ ?
2. Use the figure to complete each statement. **LIST ALL ANSWERS AS THE NEW LETTER**
a) $R_{x}: A \rightarrow$
b) $R_{y}: D \rightarrow$
c) $\mathrm{T}:(\mathrm{x}, \mathrm{y}) \rightarrow(\mathrm{x}-1, \mathrm{y}-3), \mathrm{T}: \mathrm{B} \rightarrow$
d) $\mathscr{R}_{0,90}: C \rightarrow$
e) Rj: $A \rightarrow$
3. Use $T$ : $(x, y) \rightarrow(x-2, y+1), P(2,4)$, origin $O$ and line I with equation $y=x$ to answer each.

You can use the graph to help. **LIST ALL ANSWERS AS COORDINATES**
a) $R_{x} \circ R_{y}:(2,4) \rightarrow$
b) $T \circ R_{x}:(5,1) \rightarrow$
c) $\mathscr{R}_{\mathrm{p}} \circ \mathrm{R}_{\mathrm{y}}:(1,-1) \rightarrow$
d) $\mathrm{R}_{\mathrm{y}} \circ \mathrm{R}_{\mathrm{l}}:(-2,3) \rightarrow$

4. Use the given translations $\mathrm{S}:(\mathrm{x}, \mathrm{y}) \rightarrow(\mathrm{x}+2, \mathrm{y}-3)$ and $\mathrm{T}:(\mathrm{x}, \mathrm{y}) \rightarrow(\mathrm{x}-2, \mathrm{y}+1)$ and points $\mathrm{A}(-2,4), \mathrm{B}(3,-2)$ and $\mathrm{C}(-2,0)$ to answer each. **List answers as coordinates)
a) $\mathrm{S}: \mathrm{A} \rightarrow$
b) $\mathrm{T}: \mathrm{B} \rightarrow$
c) $\mathrm{T}: \mathrm{C} \rightarrow$
d) $\mathrm{S} \circ \mathrm{T}:(x, y) \rightarrow$
5. Use the following information to answer each: $\mathrm{A}(-2,1), \mathrm{B}(2,-4)^{* *}$ LIST ALL ANSWERS AS COORDINATES**
a) $D_{0,1 / 2}: A \rightarrow$
b) $\mathrm{D}_{\mathrm{o},-3}: \mathrm{B} \rightarrow$
c) What is the reflection of $B$ around the $x$-axis?
d)What is the reflection of $A$ around the $y$-axis?
6. Write a rule for the following transformation:
e) What is the reflection of $A$ around the line $y=x$ ?

7. Plot each polygon and then reflect in the given line.
a) $A(2,4) B(-1,3) C(3,-2)$ about $x=1$

b) $D(1,2) E(3,4) F(2,-1) G(-3,-1)$ about $y=-1$

d) Use points $A, B$ and $C$ and rotate $180^{\circ}$ about the origin. What are the new coordinates?
e) Use points $A, B, C$ and $D$ and rotate $90^{\circ}$ about the origin. What are the new coordinates?
8. Plot the following points: $\quad X(-2,4) Y(1,3)$ and $Z(1,-4)$ Now plot $X^{\prime} Y^{\prime}$ and $Z^{\prime}$ after the transformation $D_{0,-2}$.


