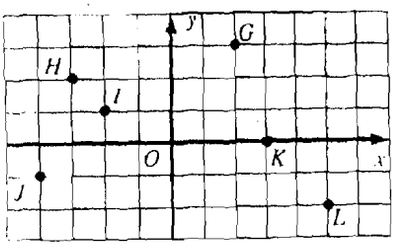
Geometry HW#____ Name_____

14-2, 14-3, 14-4

Reflections, Translations, and Rotations Date_____

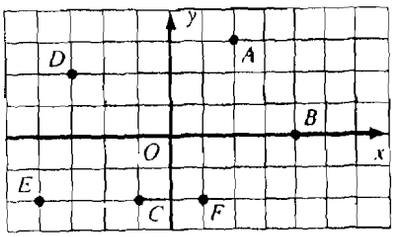
Write the coordinates of the image of each point by reflection in the *x*-axis.



1. H'_____ 2. J'_____

Write the coordinates of the image of each point by reflection in the line $y = 1$.

3. B'_____ 4. G'_____



Write the coordinates of the image of each point by reflection in the line $y = x$.

5. L'_____ 6. D'_____

Complete.

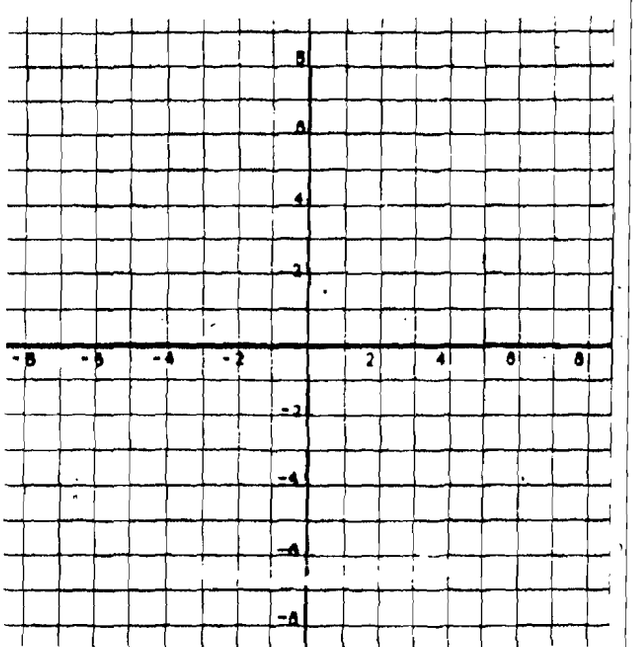
7. The translation $T:(x,y)\rightarrow(x+2,y-1)$ glides points 2 units right and _____.

The image of (2, 3) is _____ and the preimage of (-1, 2) is _____.

8. If $T:(0,0)\rightarrow(-2,5)$, then $T:(4,1)\rightarrow$ (,).

9. If $T:(4,-2)\rightarrow(1,1)$, then $T:(2,2)\rightarrow$ (,).

Given: P(7, 3) and A (3, 2). Find P' under each mapping.



10. a half-turn about A

11. a 90° rotation about the origin

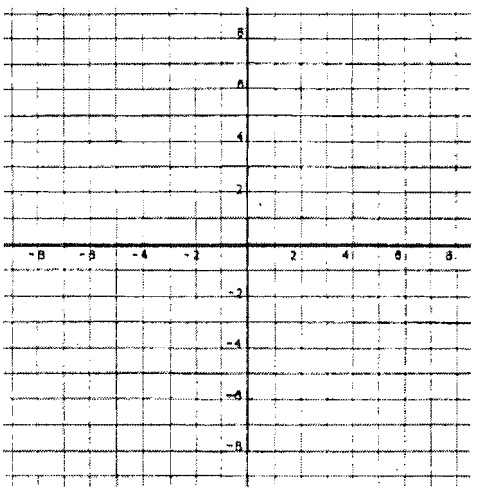
12. a reflection in the y - axis

13. a glide 2 units to the left followed by a reflection in the x - axis

14. a translation $T:(x,y)\rightarrow(x-4,y+2)$ followed by a half-turn about A

Draw the image described by the transformation. List the coordinates of the final image points.

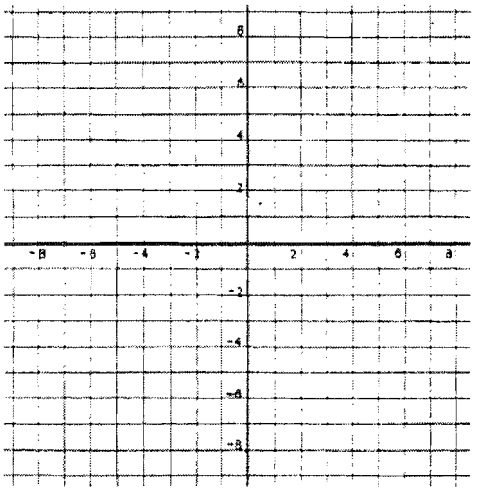
15. Rotate $\overline{AB}$ with $A(2, 1)$ and $B(5, 6)$ $-90°$ about the origin. Label the image $\overline{A'B'}$.



A'

B'

16. Rotate ΔXYZ with $X(0, 0)$, $Y(-2, 4)$, and $Z(-5, 0)$ a half-turn about point Y. Label the image $\Delta X'Y'Z'$.

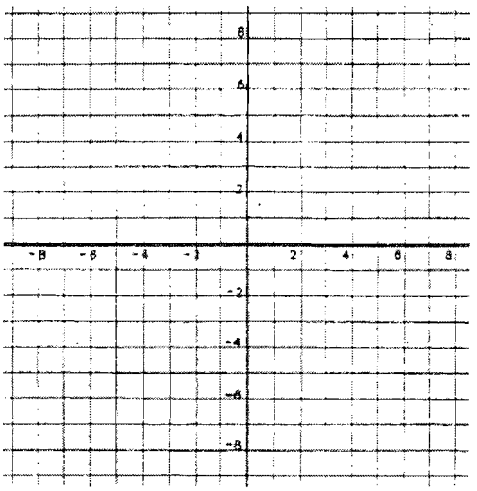


X'

Y'

Z'

17. Reflect $\overline{PR}$ with point $P(-6, 4)$ and $R(-3, 2)$ in the line $y = 1$ and then in the line $x = 1$. Label the image $\overline{P'R'}$.



P'

R'