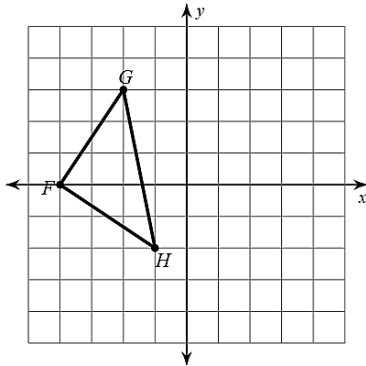


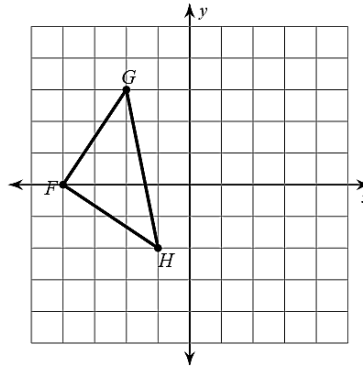
Topic: Translations	Things to Remember: ✓ Translations "slide" $(x \pm a, y \pm b)$
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Examples:

1. Translation $(x, y) \rightarrow (x - 1, y - 3)$
Graph the image.



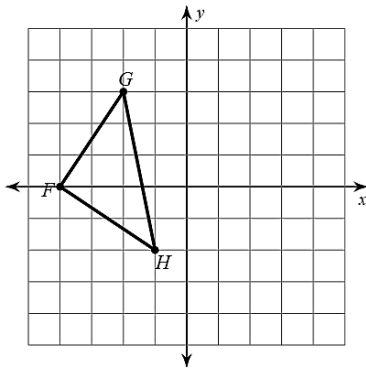
2. Translation $(x, y) \rightarrow (x + 4, y)$
Graph the image.



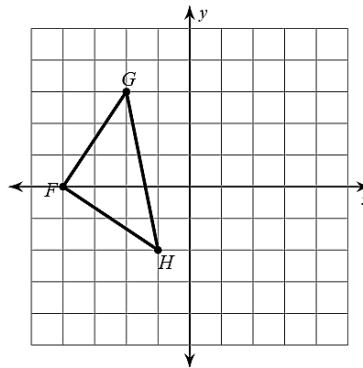
Topic: Reflections	Things to Remember: ✓ Reflections "flip" ✓ The 4 specific rules: reflection over... ✓ y-axis, x-axis, $y = x$, and $y = -x$ ✓ Reflections over lines = FIND THE MIDDLE ✓ HOY & VUX
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Examples:

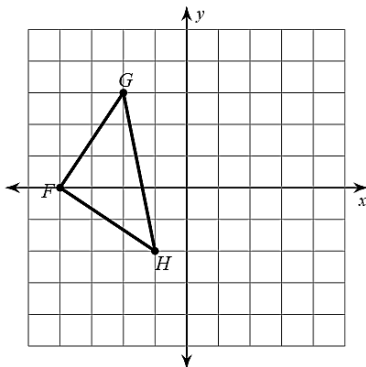
3. Reflection across the line $x = -1$
Graph the image.



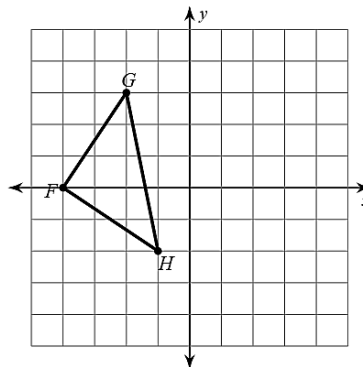
4. Reflection across the line $y = 1$
Graph the image.



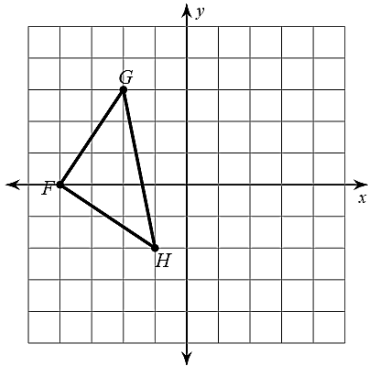
5. Reflection across the **y-axis**.
Graph the image.



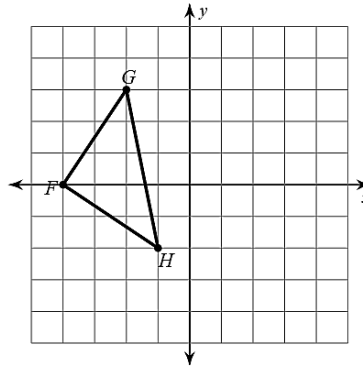
6. Reflection over $y = -x$
Graph the image.



7. Reflection across the **x-axis**.
Graph the image.



8. Reflection across the **y = x**.
Graph the image.



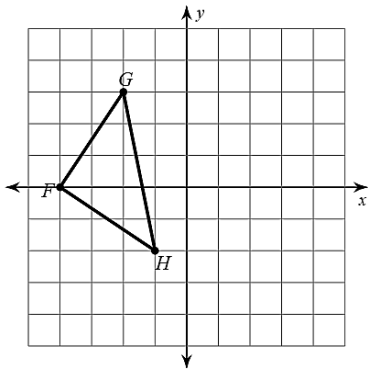
Topic: Rotations

Things to Remember:

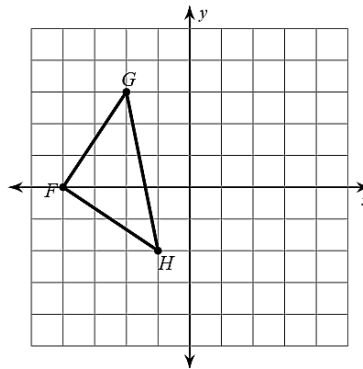
- ✓ Rotations "spin"
- ✓ The 3 specific rules: rotation of...
- ✓ 90° CCW, 180° , 90° CW
- ✓ 270° CW = 90° CCW
- ✓ 270° CCW = 90° CW

Examples:

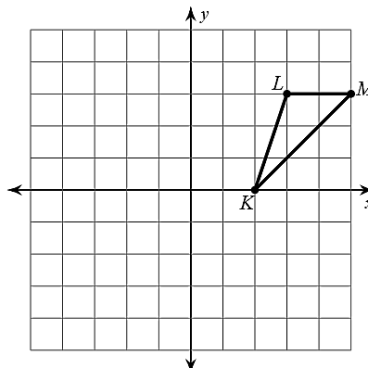
9. Rotation **180°** about the origin.
Graph the image.



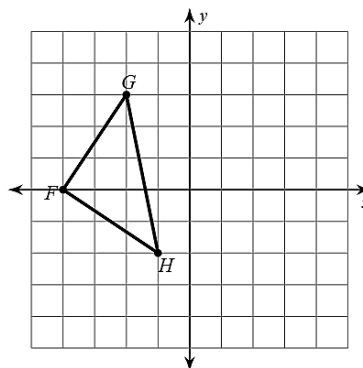
10. Rotation **90° counterclockwise** about the origin.
Graph the image.



11. Rotation **270° clockwise** about the origin.
Graph the image.



12. Rotation **270° counterclockwise** about the origin.
Graph the image.



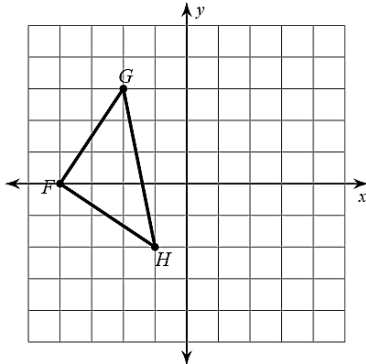
Topic: Compositions

Things to Remember:

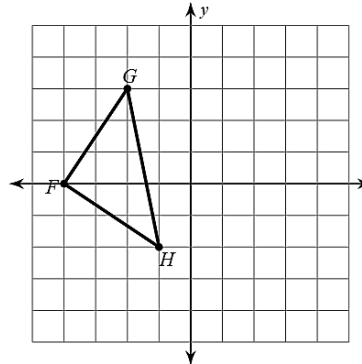
- ✓ Order matters
- ✓ $A \rightarrow A' \rightarrow A'' \rightarrow A''' \dots$

Examples:

13.
a. Translation $(x, y) \rightarrow (x - 1, y + 2)$
b. Rotation 180° about the origin.
Graph both images.



14.
a. Rotation 90° CCW about the origin
b. Reflection over the **x-axis**
Graph both images.



Topic: Creating rules

Things to Remember:

- ✓ Notice what happened from one coordinate to another
- ✓ $(y, x) \rightarrow$ indicates a switch
- ✓ Negative sign \rightarrow indicates a sign change

Examples:

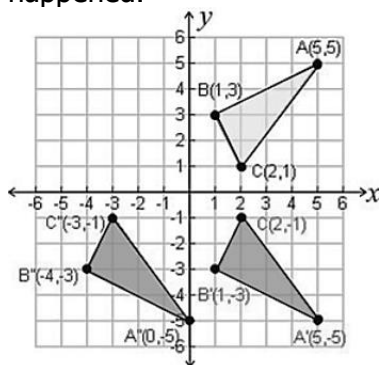
15. Write the type of transformation and rule that created $C'(-5, 3)$ and $D'(2, -7)$ from $C(3, 5)$ and $D(-7, -2)$.

16. Write TWO transformations that would create the following transformation:
 $P(-2, 4) \rightarrow P'(-2, -4)$

17. Write the type of transformation and rule that created $A(4, 5)$, $B(9, 0)$, $C(2, -4)$ to $A'(-5, -4)$, $B'(0, -9)$, $C'(4, -2)$.

18. Write the type of transformation and rule that created $Z(8, 9)$, $Y(2, -4)$ into $Z'(10, 2)$, $Y'(4, -11)$.

19. Describe the sequence of transformations that happened.



20. Describe the sequence of transformations that happened from 1 \rightarrow 2 \rightarrow 3

