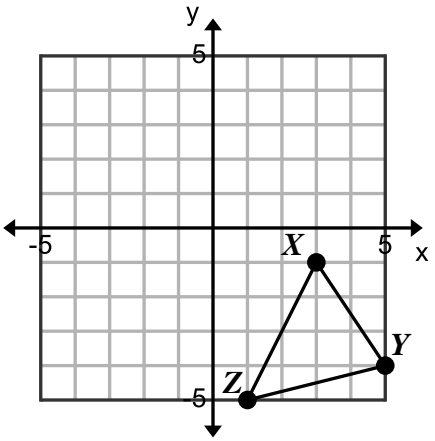
Name: _____ Period: _____ Score: _____

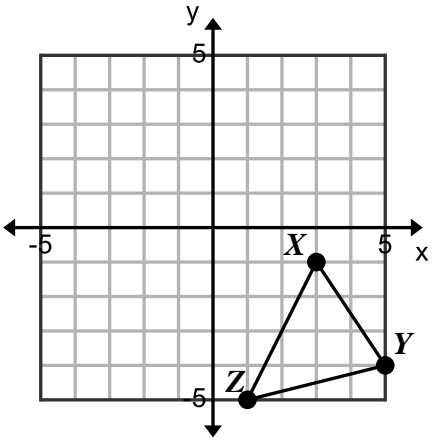
HW 8-3: Rotations from a Vertex

ΔXYZ has vertices $X(3,-1)$, $Y(5,-4)$, and $Z(1,-5)$. Graph and label the image of ΔXYZ after each rotation. Then give the coordinates of the vertices for $\Delta X'Y'Z'$.

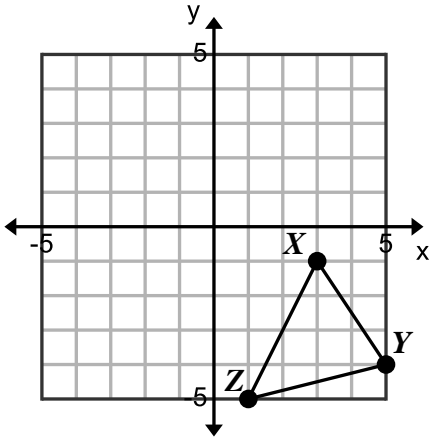
1. 90 clockwise about vertex **X**.



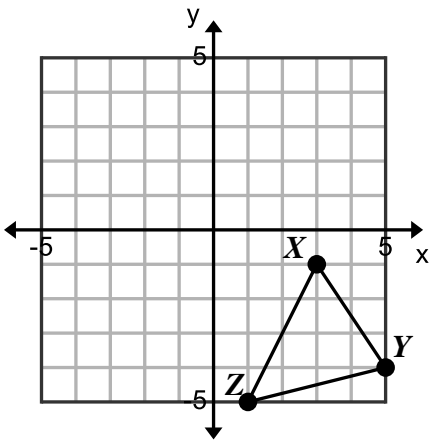
2. 180 clockwise about vertex **X**.



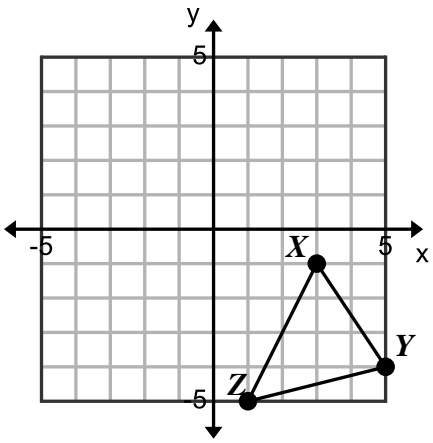
3. 270 clockwise about vertex **Z**.



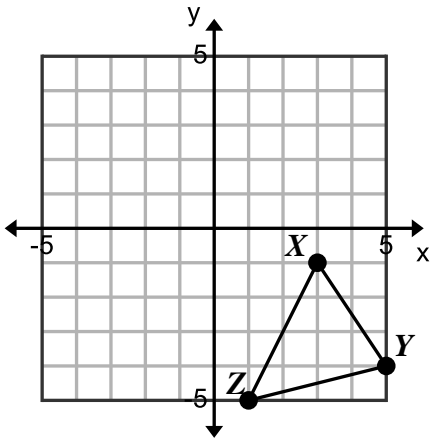
4. 90 counterclockwise about vertex **Z**.



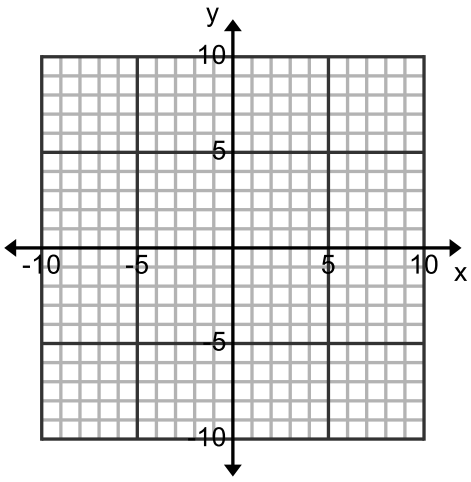
5. 180 counterclockwise about vertex **X**.



6. 270 counterclockwise about vertex **X**.



7. ΔRST has vertices $R(-7,8)$, $S(-7,2)$, and $T(-2,2)$. Graph the figure and its rotated image after a clockwise rotation of **180** about vertex **T**. Then given the coordinates of the vertices for the $\Delta R'S'T'$.

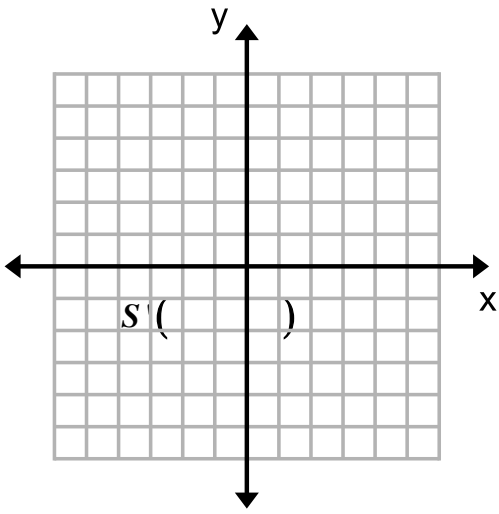


$R'(\quad)$

$S'(\quad)$

$T'(\quad)$

8. Quadrilateral $ABCD$ has vertices at $A(-3,-4)$, $B(-1,-1)$, $C(2,-2)$, and $D(3,-4)$. Graph $ABCD$ and its image after a **90** clockwise rotation about vertex **D**. Then given the coordinates of the vertices for quadrilateral $A'B'C'D'$.



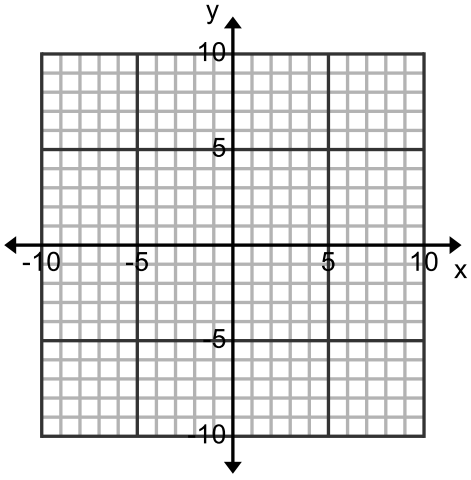
$A'(\quad)$

$B'(\quad)$

$C'(\quad)$

$D'(\quad)$

9. ΔLMN has vertices $L(3,4)$, $M(6,-2)$, and $N(1,2)$. Graph the figure and its rotated image after a counterclockwise rotation of **90** about vertex **M**. Then given the coordinates of the vertices for the $\Delta L'M'N'$.

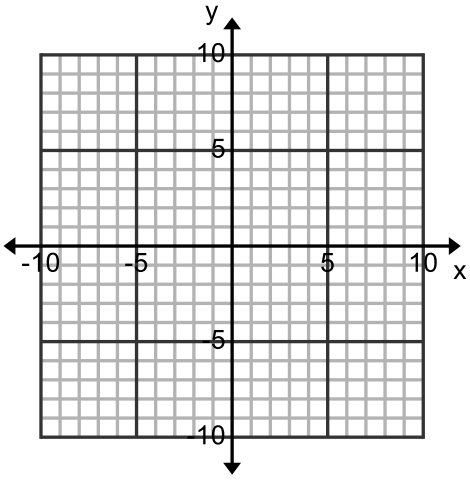


$L'(\quad)$

$M'(\quad)$

$N'(\quad)$

10. Quadrilateral $IJKL$ has vertices at $I(1,3)$, $J(4,-1)$, $K(2,-3)$, and $L(-2,-1)$. Graph $IJKL$ and its image after a **180** clockwise rotation about vertex **K**. Then given the coordinates of the vertices for the quadrilateral **I'J'K'L'**.



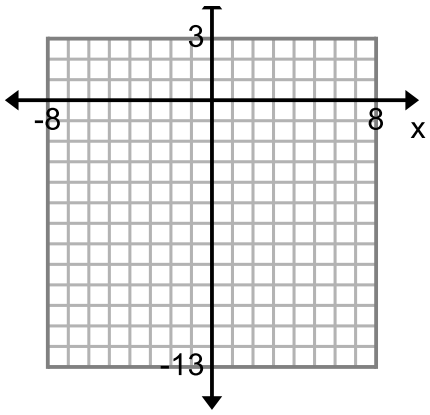
$I'(\quad)$

$J'(\quad)$

$K'(\quad)$

$L'(\quad)$

11. $EFGH$ has vertices $E(-3,-4)$, $F(-1,-1)$, $G(2,-2)$, and $H(3,-4)$. Graph the figure and its rotated image after a clockwise rotation of **90** about vertex E. Then give the coordinates of the vertices of $E'F'G'H'$.



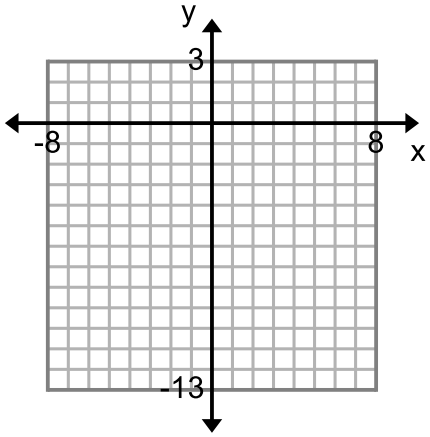
$E'(\quad)$

$F'(\quad)$

$G'(\quad)$

$H'(\quad)$

12. $EFGH$ has vertices $E(-3,-4)$, $F(-1,-1)$, $G(2,-2)$, and $H(3,-4)$. Graph the figure and its rotated image after a counterclockwise rotation of **90** about vertex **H**. Then give the coordinates of the vertices of $E'F'G'H'$.



$E'(\quad)$

$F'(\quad)$

$G'(\quad)$

$H'(\quad)$

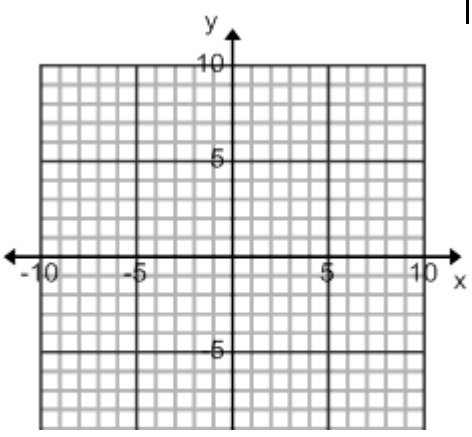
ΔMNP has vertices $M(1,4)$, $N(3,-2)$, and $P(5,3)$. Find the vertices of $M'N'P'$ after each rotation about the given vertex.

13. **90** clockwise vertex **P**

$M'(\quad)$

$N'(\quad)$

$P'(\quad)$

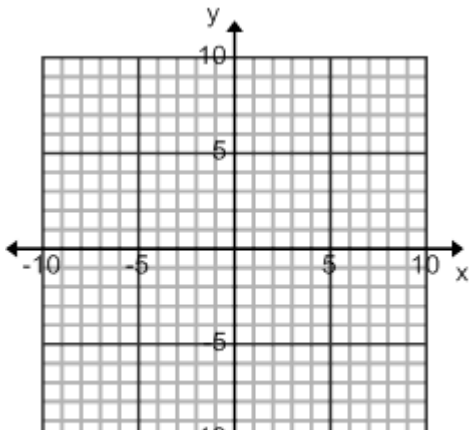


14. **180** clockwise vertex **N**

$M'(\quad)$

$N'(\quad)$

$P'(\quad)$

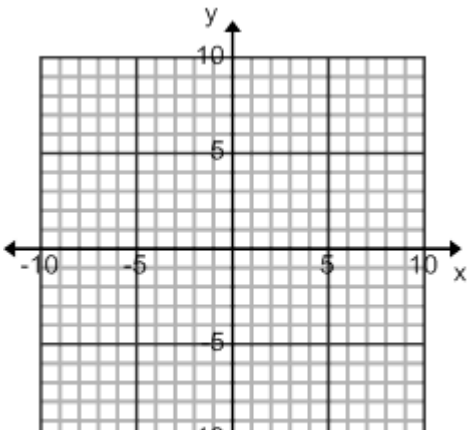


15. **90** counterclockwise vertex **M**

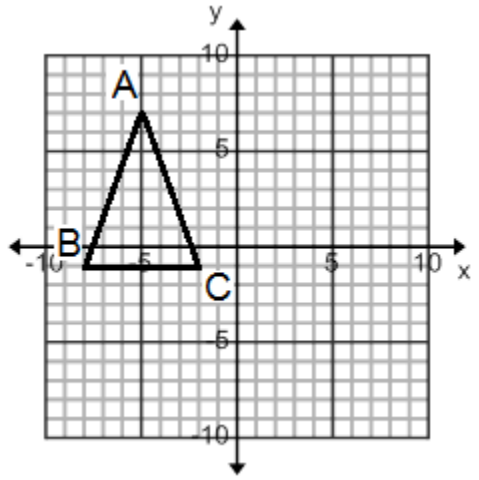
$M'(\quad)$

$N'(\quad)$

$P'(\quad)$



16. If ΔABC **is rotated 90** clockwise about vertex **C,** which is the resulting image of point **A**?



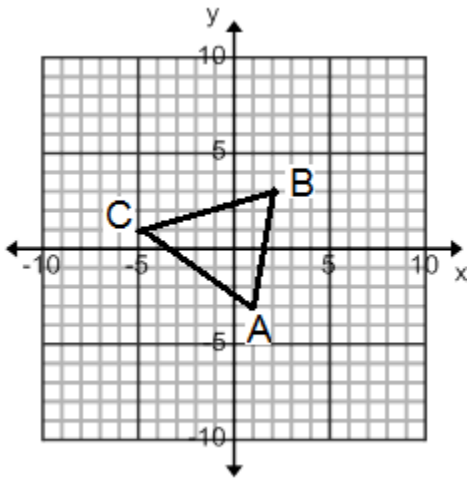
A. (-10,-4) B. (0,-4)

C. (1,-9) D. (6,2)

17. Use the graph of ΔABC shown below.

a. What are the coordinates of $\Delta A'B'C'$ when ΔABC is reflected over the *x*-axis?

b. Graph and label the image of ΔABC after it is translated 2 units right and 1 unit up. List new vertices



ΔMNP has vertices $M(5,4)$, $N(-3,-2)$, and $P(5,-3)$. Find the vertices of $M'N'P'$ after each rotation about the origin.

18. 90 clockwise

$M'($ $)$

$N'($ $)$

$P'($ $)$

19. 180 clockwise

$M'($ $)$

$N'($ $)$

$P'($ $)$

20. 90 counterclockwise

$M'($ $)$

$N'($ $)$

$P'($ $)$

STRANGE S' shows up on Question 8, be sure to white it out before making copies….