Created by Max Robinson
WARMUP $2 /\left(\frac{\pi}{\pi}+\frac{\sqrt[100]{3}}{\sqrt[100]{3}}+\frac{\operatorname{SIN} x}{\operatorname{SIN} x}+\infty-\infty+16\right)$

1. Copy this basic coordinate plane and put a " $1,2,3,4$ " in each correct quadrant:

2. If a figure starts in quadrant 2 and it rotates $90^{\circ}$ clockwise, where does it end up?
3. If a figure starts in quadrant 4 and it rotates $270^{\circ}$ clockwise, where does it end up?
4. If a figure starts in quadrant 1 and it rotates $180^{\circ}$ counterclockwise, where does it end up?
5. If a figure starts in quadrant 3 and it rotates $540^{\circ}$ counterclockwise, where does it end up?
6. If you rotate a shape $270^{\circ}$ counterclockwise, this is the same as rotating it how many degrees clockwise?

## CHECK 3 PROBLEMS

## BACK TO YOUR ROTATION NOTES (PAGE 10)

- You will also have to write one more thing on the page 9 "Trasformations Notes"


## GENERAL ROTATION STRATEGY

Physically turn the paper to visualize where the shape will be. Then turn the paper back and plot it exactly in that location!

## ROTATIONS WITHOUT PATTY PAPER

Draw this triangle: $\mathrm{H}(-4,2) ; \mathrm{E}(-4,5) ; \mathrm{Y}(2,5)$
Rotate it $18 \mathbf{0}^{\circ}$ counterclockwise.


## ROTATION STRATEGY

## Write these on your transformations notes page!

1. Turn the paper to see where the shape will end up.
2. Count squares from the origin to a vertex.
3. Turn the paper back to normal.
4. Count the same number of squares and plot the point.
5. Repeat for each vertex!

## ROTATIONS WITHOUT PATTY PAPER

Draw this quadrilateral: A(-6, 2); U(-3, 8); Q(-5, 6); D(-3, 2)
Rotate it $27 \mathbf{0}^{\circ}$ counterclockwise.


## ALTERNATE STRATEGY

Rotate $270^{\circ}$ CCW:

- In this quadrilateral, the "A" and the "D" are two squares above the -3 and the - 6 .
- The arrow shows where the shape will go ( $270^{\circ} \mathrm{CCW}=$ $90^{\circ} \mathrm{CW}$ )
- A' and D' will now be two squares away from the 3 and the 6 on the vertical axis.
- You can find Q' and U' a similar way.


Draw this triangle:

1. Rotate it $90^{\circ}$
clockwise about the origin. Label this triangle $A^{\prime} B^{\prime} C^{\prime}$.
2. Rotate it $90^{\circ}$ MORE clockwise. Label this A"B"C".
3. Rotate it $90^{\circ}$ MORE clockwise. Label this A"'B'"' ${ }^{\prime \prime}$ ".


# CHECK FOR UNDERSTANDING 

- Just do what you can!
- No patty paper.
- Hold it up when done!

