I will not ask you very much about rotations but there are two formulas I want you to know.

1) 90° rotation counterclockwise: \((x, y) \rightarrow (x^k, y^k)\)
   
   \[ x^k = \frac{1}{2} [x - y] \]
   
   \[ y^k = \frac{1}{2} [x + y] \]

2) 90° rotation clockwise: \((x, y) \rightarrow (x^k, y^k)\)
   
   \[ x^k = \frac{1}{2} [x + y] \]
   
   \[ y^k = \frac{1}{2} [x - y] \]

Now I want to apply these to questions. I will not ask you to do this so this is optional material.

First example: What happens to the line \(y = x\) when you rotate it clockwise 90°?

Notice \(y^k = \frac{1}{2} [-x + y] = \frac{1}{2} [y - x] = 0\).

This is a horizontal line through the origin.

\[
\begin{array}{c|c|c}
\delta^\prime & y = x & y^k = 0 \\
\hline
x \rightarrow & \rightarrow & \rightarrow \end{array}
\]

Thus is correct! (Whew...!)