

## Rotations

On the coordinate plane, plot  $P(2, 5)$ .

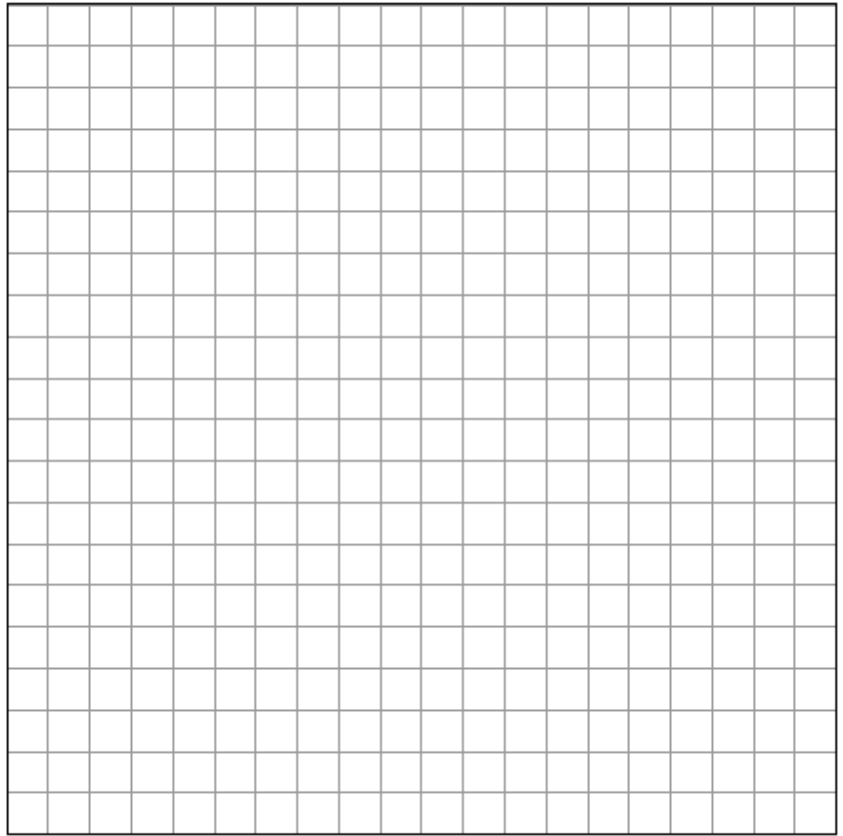
Then plot and state the coordinates of:

$$A = R_{90^\circ}(P)$$

$$B = R_{-90^\circ}(P)$$

$$C = R_{180^\circ}(P)$$

$$D = R_{270^\circ}(P)$$



Fill in the rules for rotations of  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$ .

Reflection in the x-axis	$r_{x\text{-axis}}(x, y) = (x, -y)$
Reflection in the y-axis	$r_{y\text{-axis}}(x, y) = (-x, y)$
Reflection in the line $y = x$	$r_{y=x}(x, y) = (y, x)$
Reflection in the line $y = -x$	$r_{y=-x}(x, y) = (-y, -x)$
Reflection in the origin	$R_O(x, y) = (-x, -y)$
Translation	$T_{a,b}(x, y) = (x + a, y + b)$
Dilation of factor $k$ ( $k \neq 0$ )	$D_k(x, y) = (kx, ky)$
Rotation of $90^\circ$	$R_{90^\circ}(x, y) =$
Rotation of $180^\circ$	$R_{180^\circ}(x, y) =$
Rotation of $270^\circ$ (or $-90^\circ$ )	$R_{270^\circ}(x, y) =$