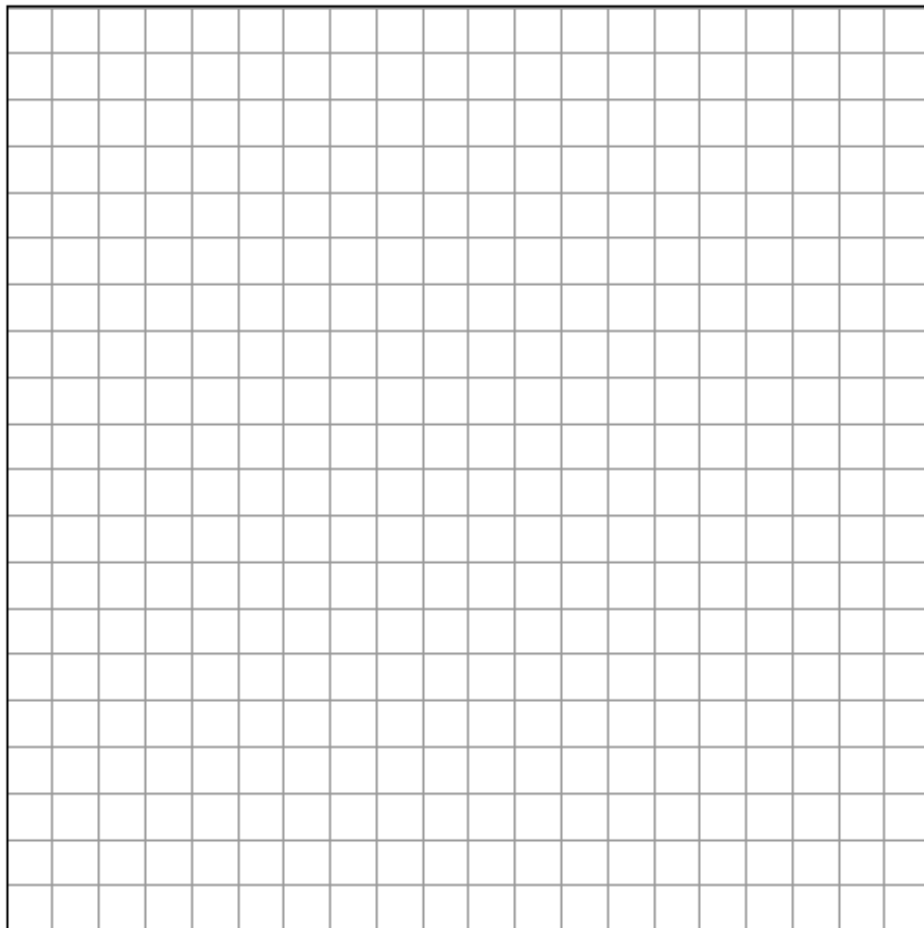


M\$5 Classwork 8

Dilations and Rotations

Do Now:

- Graph $\triangle BIG$, with coordinates $B(2,2)$, $I(6,4)$, $G(4,-2)$.
- Graph $\triangle B'I'G'$, the image of $\triangle BIG$ under the transformation $D_{-\frac{1}{2}}$.
- Graph $\triangle B''I''G''$, the image of $\triangle B'I'G'$ under the transformation $R_{(0,0)}$.
- What single transformation is the composite of the transformations in parts b and c?



Developing the rules for rotations in the coordinate plane

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

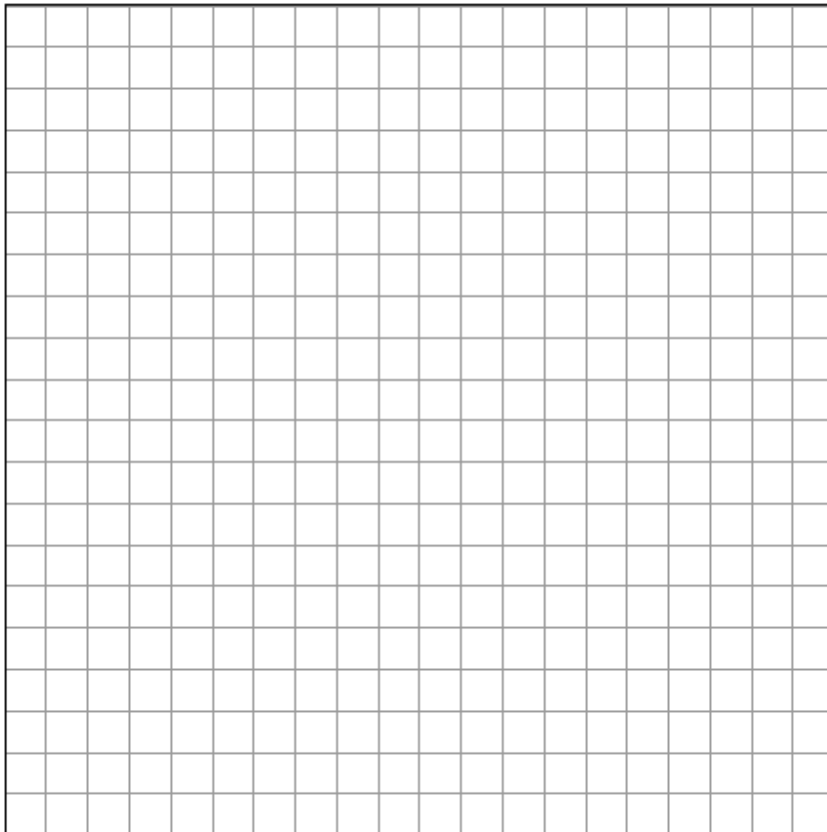
Then plot and state the coordinates of:

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

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

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

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



Fill in the rules for rotations of 90° , 180° , and 270° .

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	$R_{\text{origin}}(x, y) = (-x, -y)$
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°	$R_{90^\circ}(x, y) =$
Rotation of 180°	$R_{180^\circ}(x, y) =$
Rotation of 270° (or -90°)	$R_{270^\circ}(x, y) =$