

ORIGINAL POINT:  $(X, Y)$

GEOMETRY TRANSFORMATIONS

		$(3, 5)$	$(4, -7)$	$(-2, 6)$	$(-1, -9)$
ROTATION $90^\circ$ CCW ( $270^\circ$ clockwise)	$(x, y) \rightarrow (-y, x)$	$(-5, 3)$	$(7, 4)$	$(-6, -2)$	$(9, -1)$
ROTATION $180^\circ$ CCW / clockwise	$(x, y) \rightarrow (-x, -y)$	$(-3, -5)$	$(-4, 7)$	$(2, -6)$	$(1, 9)$
ROTATION $270^\circ$ CCW ( $90^\circ$ clockwise)	$(x, y) \rightarrow (y, -x)$	$(5, -3)$	$(-7, 4)$	$(6, 2)$	$(-9, 1)$
ROTATION $360^\circ$ CCW / clockwise	$(x, y) \rightarrow (x, y)$	$(3, 5)$	$(4, -7)$	$(-2, 6)$	$(-1, -9)$
REFLECTION OVER Y-AXIS ( $x=0$ )	$(x, y) \rightarrow (-x, y)$	$(-3, 5)$	$(-4, -7)$	$(2, 6)$	$(1, -9)$
REFLECTION OVER X-AXIS ( $y=0$ )	$(x, y) \rightarrow (x, -y)$	$(3, -5)$	$(4, 7)$	$(-2, -6)$	$(-1, 9)$
REFLECTION OVER LINE $y=x$ ( $-y=-x$ ) ( $x=y$ ) ( $-x=-y$ )	$(x, y) \rightarrow (y, x)$	$(5, 3)$	$(-7, 4)$	$(6, -2)$	$(-9, -1)$
REFLECTION OVER LINE $y=-x$ ( $-y=x$ ) ( $x=-y$ ) ( $-x=y$ )	$(x, y) \rightarrow (-y, -x)$	$(-5, -3)$	$(7, -4)$	$(-6, 2)$	$(9, 1)$
DILATION BY FACTOR OF "K" ABOUT ORIGIN $ K  > 1$ (ENLARGEMENT) $ K  < 1$ (REDUCTION)	$(x, y) \rightarrow (Kx, Ky)$				
TRANSLATION BY "H" units Right/Left (+/-) and "K" units up/Down (+/-)	$(x, y) \rightarrow (x \pm H, y \pm K)$				