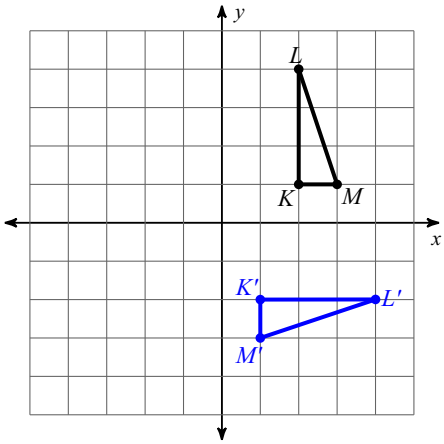
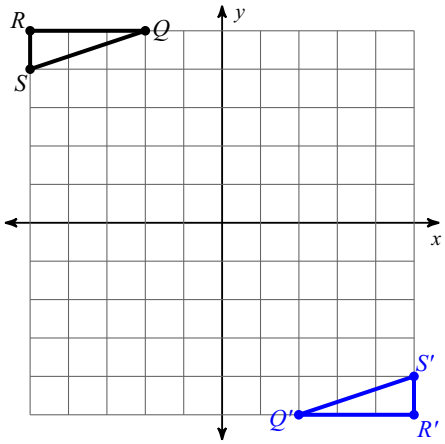
Write a rule to describe each transformation.

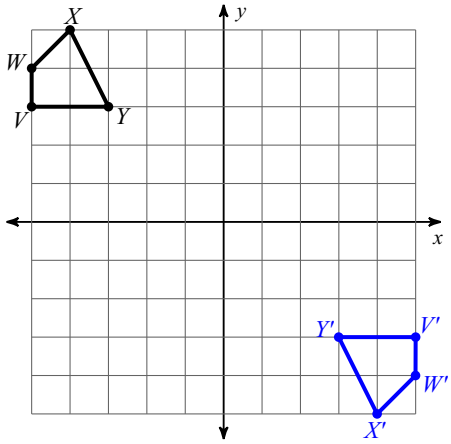
1)



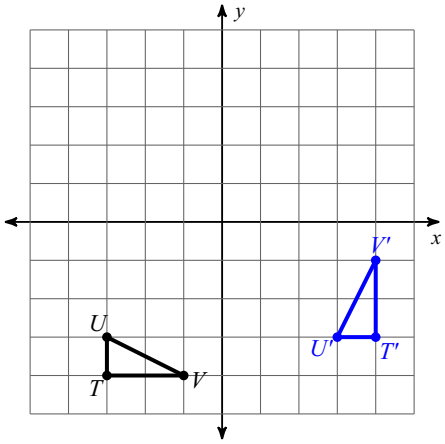
2)



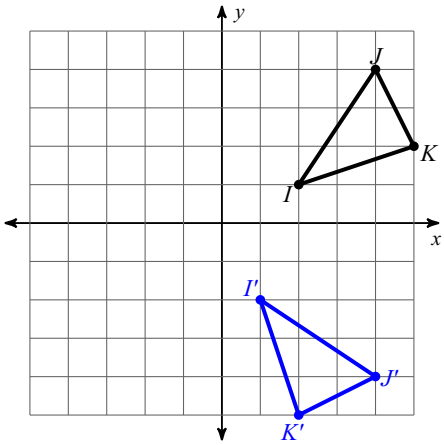
3)



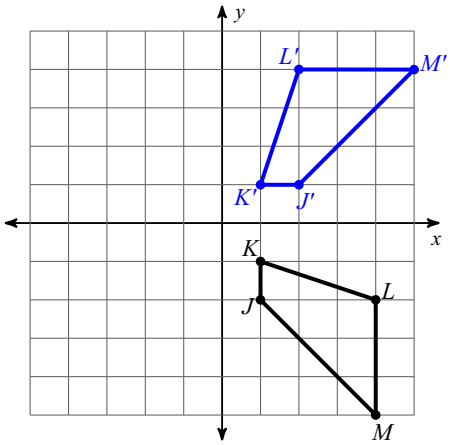
4)



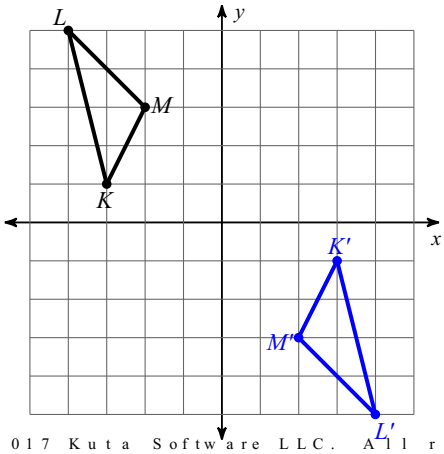
5)



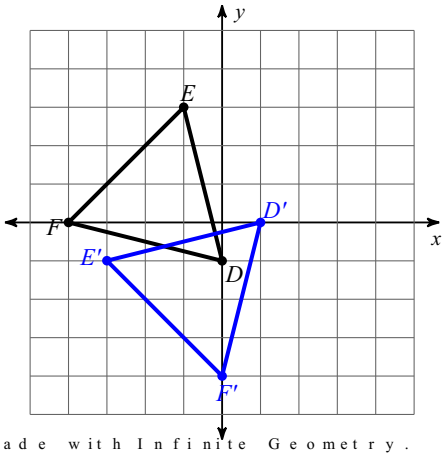
6)



7)

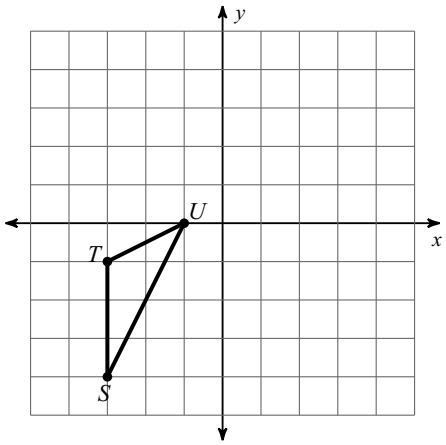


8)

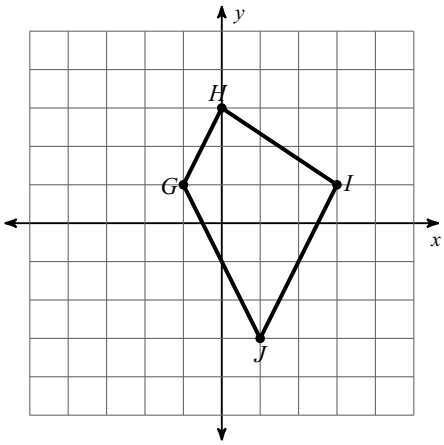


Graph the image of the figure using the transformation given.

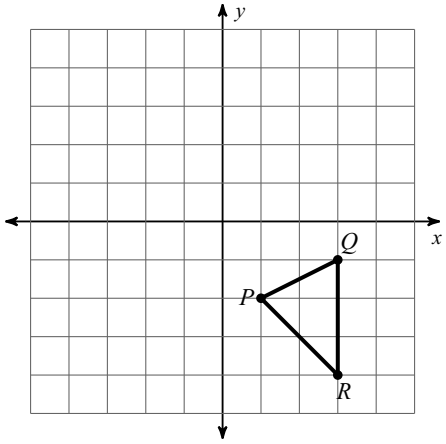
9) rotation 90° clockwise about the origin



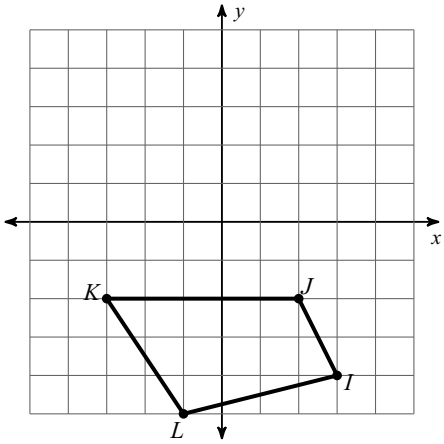
10) rotation 180° about the origin



11) rotation 90° counterclockwise about the origin



12) rotation 90° clockwise about the origin



Find the coordinates of the vertices of each figure after the given transformation.

13) rotation 180° about the origin
$E(1, -4)$, $F(2, 0)$, $G(4, -1)$, $H(4, -3)$

14) rotation 90° clockwise about the origin
$I(0, -5)$, $J(-1, -3)$, $K(1, -1)$, $L(5, -3)$

15) rotation 180° about the origin
$H(0, -4)$, $I(0, -3)$, $J(4, -3)$, $K(2, -5)$

16) rotation 90° counterclockwise about the origin
$R(-5, -3)$, $S(-5, -2)$, $T(-3, -4)$, $U(-4, -4)$

17) rotation 90° counterclockwise about the origin
$H(1, -4)$, $G(3, -2)$, $F(2, -5)$

18) rotation 90° clockwise about the origin
$K(3, 2)$, $L(3, 5)$, $M(5, 5)$

19) rotation 180° about the origin
$V(1, -3)$, $U(2, 0)$, $T(4, -4)$

20) rotation 90° counterclockwise about the origin
$A(2, -4)$, $B(1, -2)$, $C(5, -2)$, $D(4, -4)$