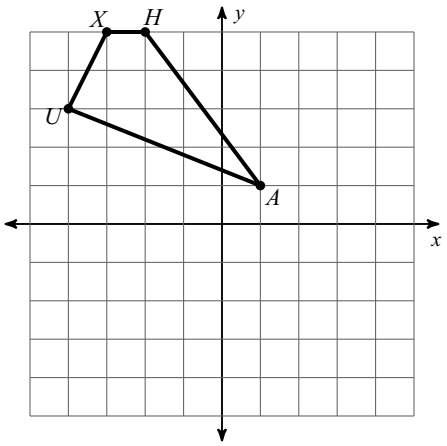
Transformations Name_____

Translations

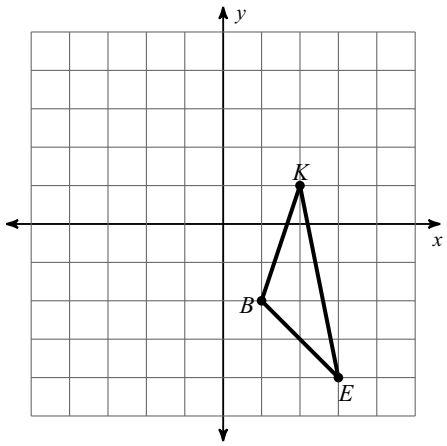
Date_____ Period____

Graph the image of the figure using the transformation given.

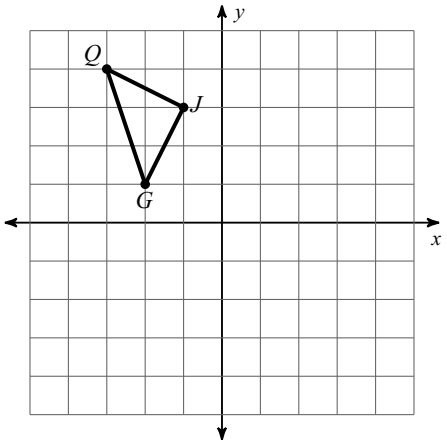
1) translation: 3 units right and 4 units down



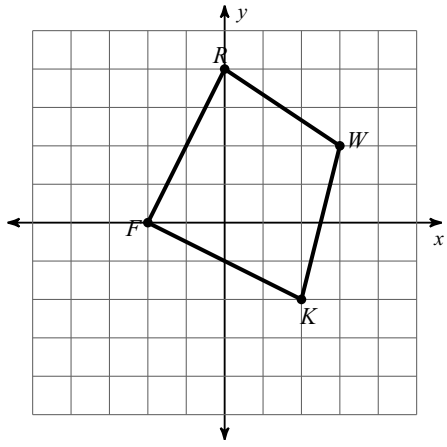
2) translation: 2 units left and 3 units up



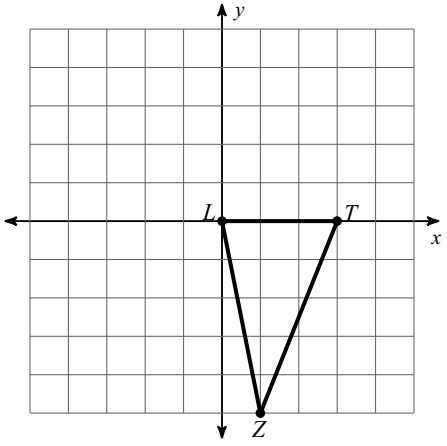
3) translation: 5 units right and 3 units down



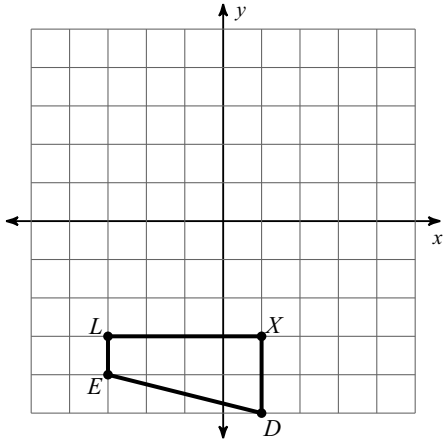
4) translation: 3 units left and 2 units down



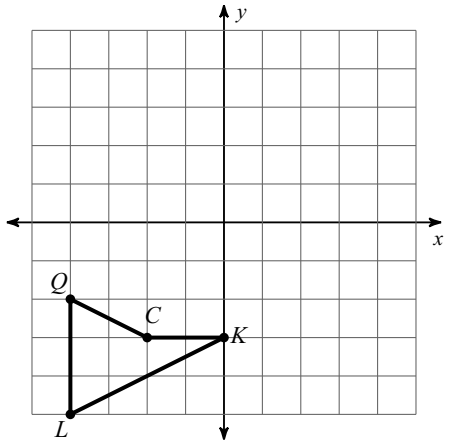
5) translation: $(x, y) \rightarrow (x + 1, y + 4)$



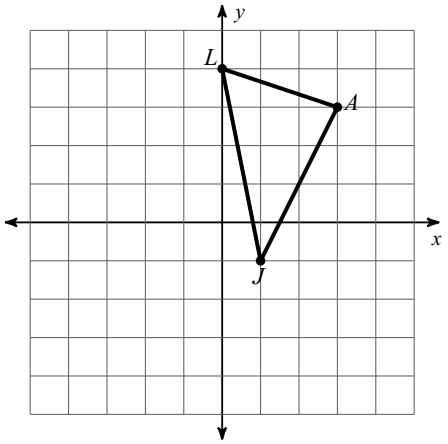
6) translation: $(x, y) \rightarrow (x + 1, y + 1)$



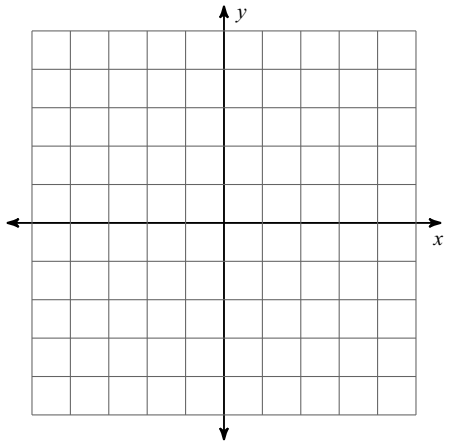
7) translation: $(x, y) \rightarrow (x + 5, y + 5)$



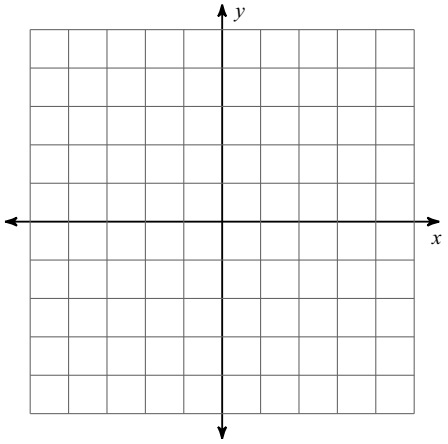
8) translation: $(x, y) \rightarrow (x - 3, y - 1)$



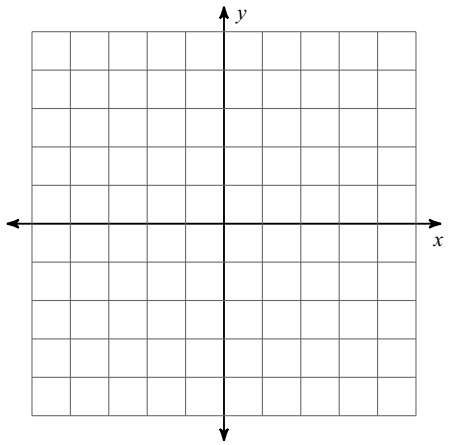
9) translation: 1 unit left and 3 units down
$X(-1, 0)$, $A(-3, 2)$, $T(1, 5)$, $S(0, 0)$



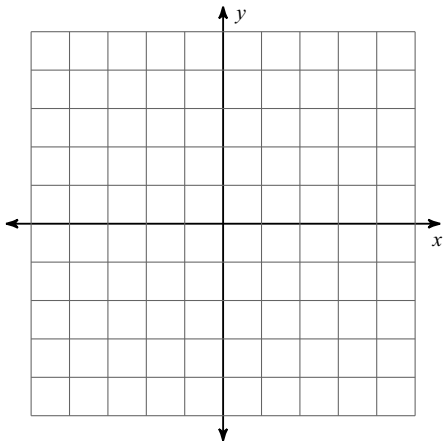
10) translation: 1 unit right and 2 units down
$S(0, -1)$, $M(-1, 3)$, $B(1, 2)$, $P(4, 2)$



11) translation: 1 unit right and 4 units up
$F(-4, -4)$, $J(-4, 0)$, $G(-3, 0)$, $P(0, -4)$



12) translation: 1 unit left and 2 units up
$D(-3, -3)$, $N(-4, 0)$, $G(-3, 0)$, $J(2, -2)$



Write a rule to describe each transformation.

13) $F(-3, -2), A(1, 1), T(2, -3)$
to
$F'(-1, -4), A'(3, -1), T'(4, -5)$

14) $M(1, 2), P(4, 4), H(3, -1)$
to
$M'(-4, 2), P'(-1, 4), H'(-2, -1)$

15) $A(-4, 1), Z(-4, 5), C(-2, 5), R(0, 3)$
to
$A'(-5, 0), Z'(-5, 4), C'(-3, 4), (-1, 2)$

16) $V(0, 3), T(0, 4), A(3, 2), G(2, 2)$
to
$V'(-3, 4), T'(-3, 5), A'(0, 3), (-1, 3)$

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

17) translation: 1 unit left and 1 unit down
$Y(-4, -1), C(-4, 0), H(-2, 2), X(-2, -3)$

18) translation: 1 unit left and 6 units down
$V(-3, 2), W(0, 5), H(2, 3)$

19) translation: 2 units left and 2 units down
$F(1, -3), V(-1, 0), B(4, 2), G(5, -2)$

20) translation: 2 units down
$B(1, 1), Q(3, 3), G(5, 0)$