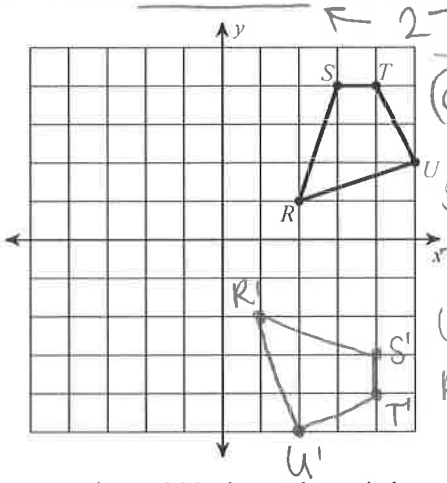
Geometry Name Key

WS PC #1 Review Unit 4

Graph the image of the figure using the transformation given.

1) rotation 90° clockwise about the origin ← 270° counter.



$(a,b) \to (b,-a)$

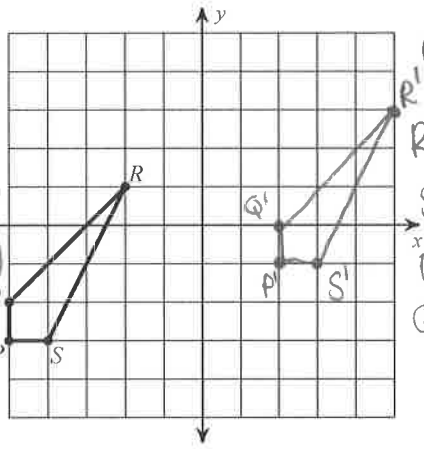
$S(3,4) \to S'(4,-3)$

$T(4,4) \to T'(4,-4)$

$U(5,2) \to U'(2,-5)$

$R(2,1) \to R'(1,-2)$

2) translation: 7 units right and 2 units up



$(x+7, y+2)$

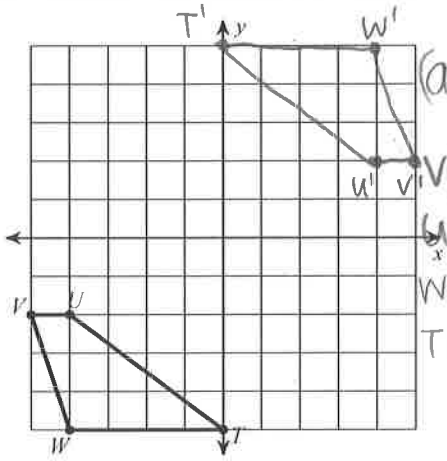
$R(-2,1) \to R'(5,3)$

$S(-4,-3) \to S'(3,-1)$

$P(-5,-3) \to P'(2,-1)$

$Q(-5,-2) \to Q'(2,0)$

3) rotation 180° about the origin



$(a,b) \to (-a,-b)$

$V(-5,-2) \to V'(5,2)$

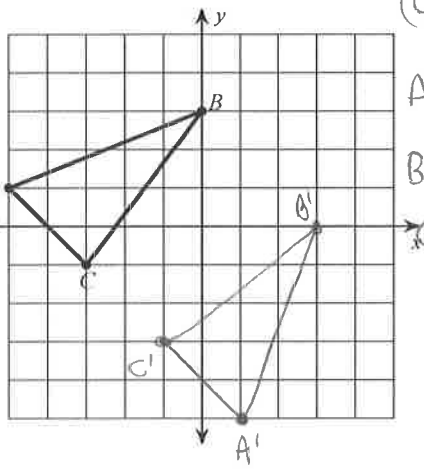
$U(-4,-2) \to U'(4,2)$

$W(-4,5) \to W'(4,5)$

$T(0,-5) \to T'(0,5)$

4) reflection across $y = x$

$(a,b) \to (b,a)$



$A(-5,1) \to A'(1,-5)$

$B(0,3) \to B'(3,0)$

$C(-3,-1) \to C'(-1,-3)$

Write a rule to describe each transformation.

5) $V(2,-3)$, $W(0,1)$, $X(4,3)$, $Y(5,0)$
to
$V'(3,2)$, $W'(-1,0)$, $X'(-3,4)$, $Y'(0,5)$

$(a,b) \to (-b,a)$

rotate 90°

6) $I(-5,-1)$, $H(-5,0)$, $G(-2,3)$, $F(-1,-1)$
to
$H'(-5,4)$, $G'(-2,1)$, $F'(-1,5)$, $I'(-5,5)$

reflection $y = 2$

7) $U(1,-5)$, $V(2,-4)$, $W(5,-5)$
to
$V'(-4,2)$, $W'(-5,5)$, $U'(-5,1)$

$(a,b) \to (b,a)$

reflection $y = x$

8) $U(-2,0)$, $V(-3,5)$, $W(-1,4)$
to
$U'(-1,-4)$, $V'(-2,1)$, $W'(0,0)$

$(a,b) \to (a+1, b-4)$

translate 1 right and 4 down

9) $H(-5, 0), I(-4, 3), J(0, 1)$
to
$H'(-1, 0), I'(0, 3), J'(4, 1)$

$(a, b) \rightarrow (a+4, b+0)$
translate 4 right

10) $M(-5, 3), L(0, 5), K(0, 3)$
to
$L'(-2, 5), K'(-2, 3), M'(3, 3)$

reflection $x = -1$

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

11) reflection across $x = 1$
$K(1, 1), L(1, 5), M(3, 2)$

$K'(1,1)$ $L'(1,5)$ $M'(-1,2)$

12) rotation 90° clockwise about the origin
$I(-4, 3), J(-3, 4), K(-2, 2)$ $(-b, a)$

$I'(-3,-4)$ $J'(-4,-3)$ $K'(-2,-2)$

13) reflection across the x-axis
$W(-2, -1), V(-3, 4), U(0, 1)$ $(a, -b)$

$W'(-2,1)$ $V'(-3,-4)$ $U'(0,-1)$

14) translation: $(x, y) \rightarrow (x + 4, y + 8)$
$S(1, -5)$

$S'(5,3)$

15) reflection across $y = x$ (b, a)
$I(-1, -1)$

$I'(-1,-1)$

16) rotation 180° about the origin
$Q(-4, 4)$ $(-a, -b)$

$Q'(4,-4)$

17) reflection across $y = 1$
$X(1, 0)$

$X'(1,2)$

18) translation: $(x, y) \rightarrow (x - 3, y + 4)$
$K(5, 1)$

$K'(2,5)$

19) Find the image of point $B(-2, 5)$ after the glide reflection.

translation $(x, y) \rightarrow (x - 4, y + 6)$ reflection across $y = -x$
$(-b, -a)$

$B'(-6,11) \rightarrow B''(-11,6)$

20) Preimage $A(3, -5)$ is translated along a vector to its image $A'(-6, 0)$. What's the component form of the vector?

$A(3,-5) \rightarrow A'(-6,0)$

$\langle -9, 5 \rangle$

21) How many lines of symmetry would a regular hexagon have?

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