Sec I - Unit 4 Triangles Name_____ ID: 1

Notes - Day 2 Triangle Transformation

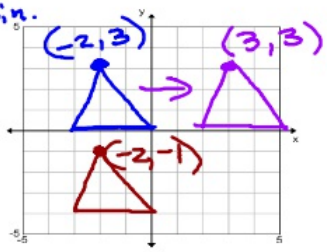
Date_____ Period____

1) Transformations:

Translation: preseves shape & orientation. moves (slides)

Rule: Side to Side $(x,y) \to (x+h, y)$

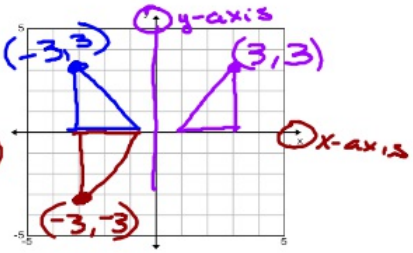
up and down $(x,y) \to (x, y+k)$



Reflection: flip over axis.

Rule: across y-axis $(x,y) \to (-x,y)$

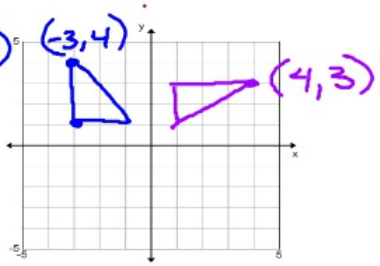
across x-axis $(x,y) \to (x,-y)$



Rotation: Spin around origin (0,0)

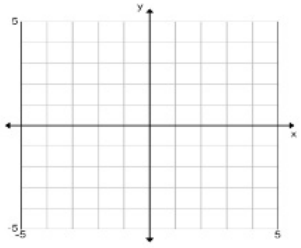
Rule: Clockwise spin

$(x,y) \to (-y,x)$



Dialation:

Rule:



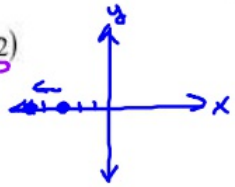
Given the pre-image and the new image, write a rule to describe each transformation.

Translation:

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

-2 0 -2 0 -2 0

Left 2,



3) $E(-4, -1), D(-2, 0), C(-4, -4)$
to
$E'(-3, 4), D'(-1, 5), C'(-3, 1)$

+1 +5 +1 +5 +1 +5

Right 1, up 5

4) $N(-4, -3), M(-1, 0), L(-2, -4)$
to
$N'(-3, -4), M'(0, -1), L'(-1, -5)$

+1 -1 +1 -1 +1 -1

Right 1, down 1

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

Reflection:

6) $U(1, 4), T(5, 5), S(1, 2)$
to
$T'(5, -5), S'(1, -2), U'(1, -4)$

7) $W(-3, -2), X(-1, -1), Y(-2, -3)$
to
$X'(-1, 1), Y'(-2, 3), W'(-3, 2)$

8) $L(-5, 2), K(-5, 4), J(-2, 5)$
to
$K'(-5, -4), J'(-2, -5), L'(-5, -2)$

9) $S(0, -5), T(3, -1), U(3, -4)$
to
$T'(3, 1), U'(3, 4), S'(0, 5)$

Rotation:

10) $R(3, -3), S(4, -3), T(4, -5)$
to
$R'(-3, 3), S'(-4, 3), T'(-4, 5)$

11) $T(3, -3), U(3, -1), V(5, -3)$
to
$T'(-3, 3), U'(-3, 1), V'(-5, 3)$

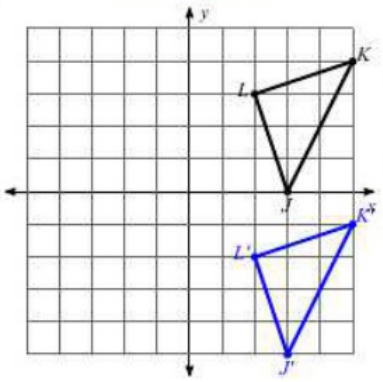
12) $N(0, 1), M(3, 5), L(4, 0)$
to
$N'(0, -1), M'(-3, -5), L'(-4, 0)$

13) $T(-3, -1), U(1, 0), V(1, -3)$
to
$T'(3, 1), U'(-1, 0), V'(-1, 3)$

Given the pre-image and the new image, write a rule to describe each transformation.

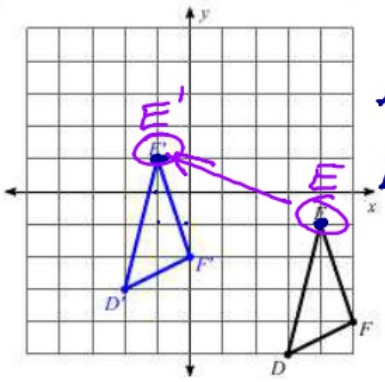
Translation:

14) down 5



△KLJ → △K'L'J

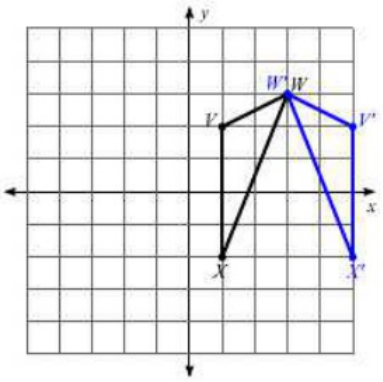
15) Left 5 up 2



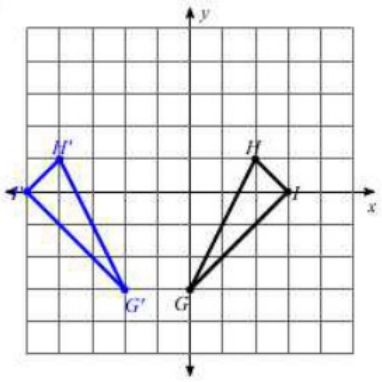
△EFD → △E'F'D'

Relfection:

16)

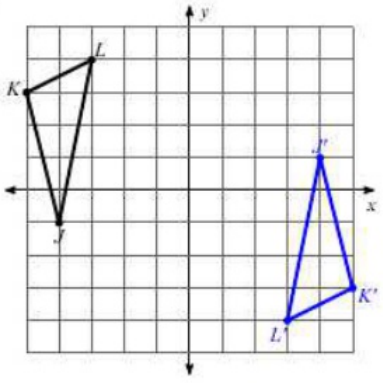


17)

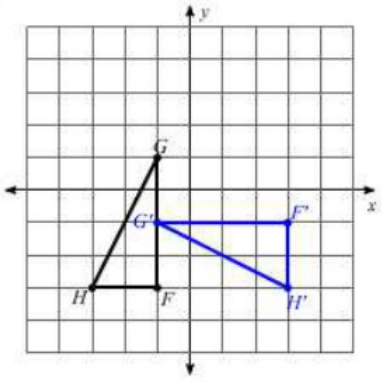


Rotation:

18)

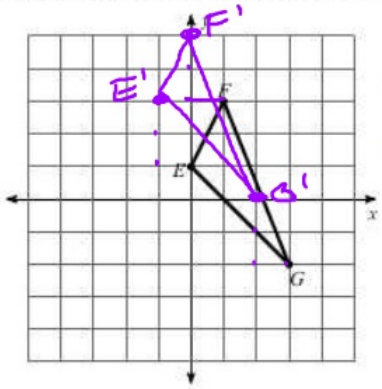


19)



Given the pre-image and rule, graph the image of the figure using the transformation given.

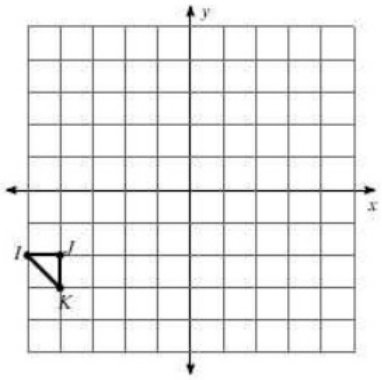
20) translation: 1 unit left and 2 units up



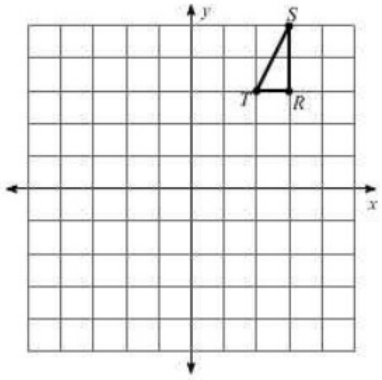
△FEG

△F'E'G'

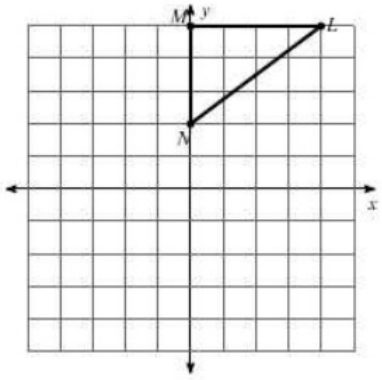
21) translation: 6 units right and 3 units up



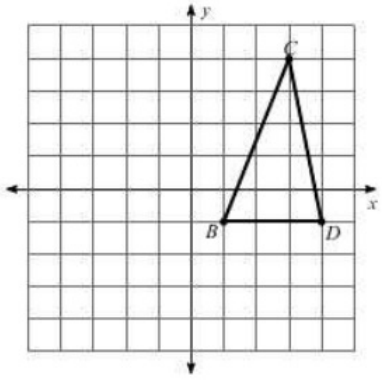
22) reflection across $y = 2$



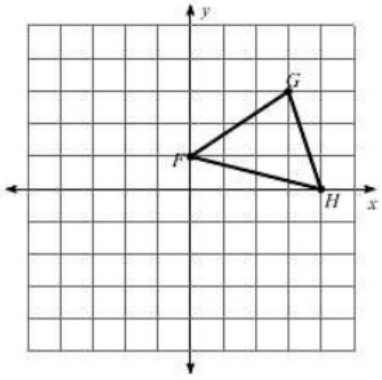
23) reflection across $x = 1$



24) rotation 180° about the origin

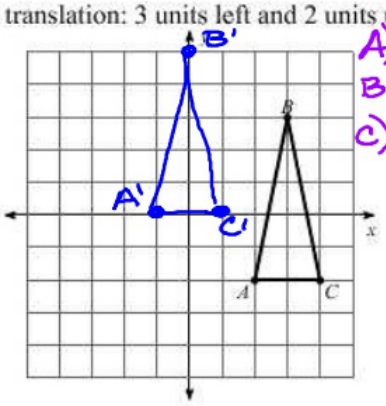


25) rotation 180° about the origin



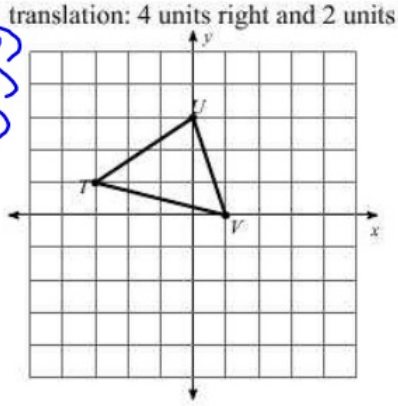
Given the pre-image and the new image, Find the coordinates of the vertices of each figure after the given transformation.

26) translation: 3 units left and 2 units up

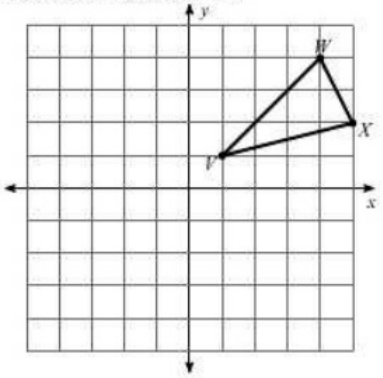


A)(2,-2) A'(-1,0)
B(3,3) B'(0,5)
C)(4,-2) C'(1,0)

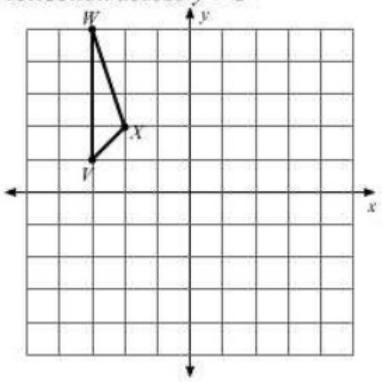
27) translation: 4 units right and 2 units down



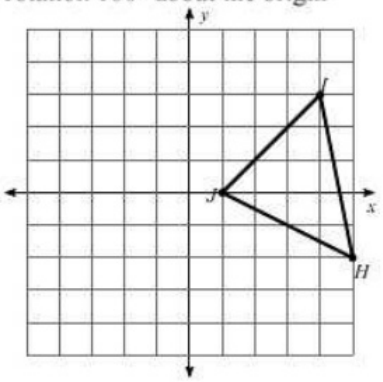
28) reflection across $x = 3$



29) reflection across $y = 3$



30) rotation 180° about the origin



31) rotation 180° about the origin