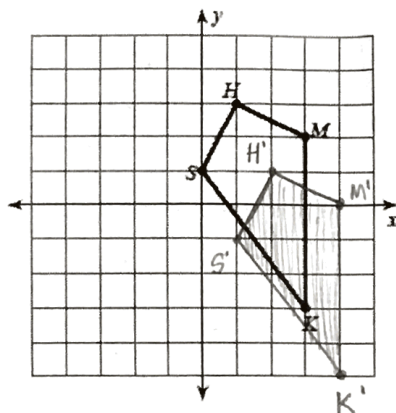


Name: KEY

Pd. all

Unit 2 Test Study Guide

Transformations



1. Transform HSMK according to $(x, y) \rightarrow (x + 1, y - 2)$.
 a. Graph the image
 b. Write the coordinates of the image:

H' (2, 1) S' (1, 1) M' (3, 1) K' (3, -1)

- c. Describe the transformation in words:

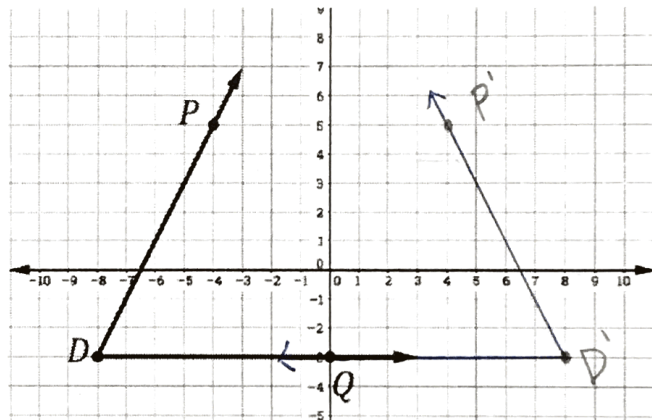
A shift + right 1, down 2

2. $\triangle ABC$ has coordinates A(4, -6), B(2, 1), C(-10, 4) and undergoes a dilation with a scale factor of $\frac{1}{2}$ centered at the origin. Give the coordinates of the image. $k = \frac{1}{2}$
 ↪ smaller

A' (2, -3) B' (1, $\frac{1}{2}$) C' (-5, 2)

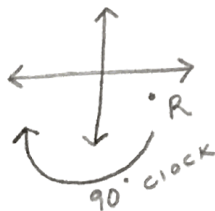
3. Reflect $\angle PDQ$ across the y-axis. Graph the image and state the coordinates.

P' (4, 5) D' (8, -3) Q' (0, -3)



4. $\triangle RST$ has coordinates R(4, -2), S(7, 1), T(-2, 6) and undergoes a 90° clockwise rotation about the origin. Identify the coordinates of $\triangle R'S'T'$.

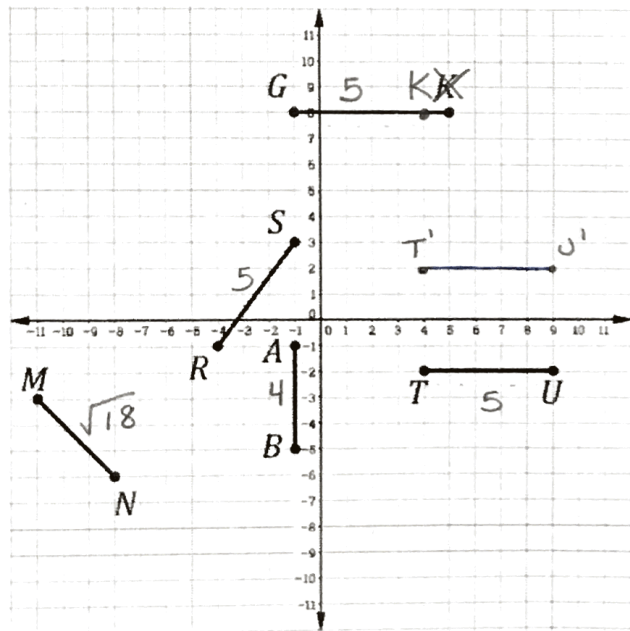
- a) R'(4, 2), S'(7, -1), T'(-2, -6)
 b) R'(-2, -4), S'(1, -7), T'(6, 2)
 c) R'(-2, 4), S'(1, 7), T'(6, -2)
 d) R'(-2, 4), S'(-1, 7), T'(-6, -2)



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

5. TU was transformed. Match TU with the image segment that was produced after the indicated transformation. * make $K = (4, 8)$

A) Translation	→	I. GK
B) Rotation	→	II. RS (only one same size as TU)
C) Dilation	→	III. AB $k = \frac{4}{5} = \frac{AB}{TU}$ NEW OLD



Part 2: Draw a reflection of TU over the x-axis.

see graph for T'U'

6. Point A becomes A' after the following algebraic description was applied $(x, y) \rightarrow (x - 5, y + 2)$.

A' is (3, -4). What is the pre-image A?

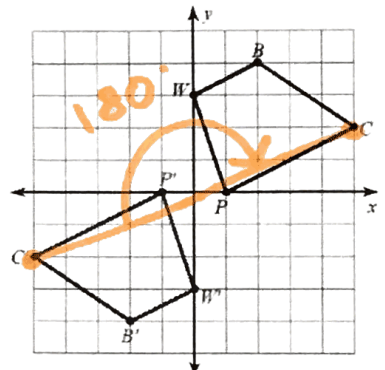
$$A \xrightarrow{T-5, 2} A' \begin{matrix} (3, -4) \\ +5 \quad -2 \\ \hline (8, -6) \end{matrix}$$

A(8, -6)

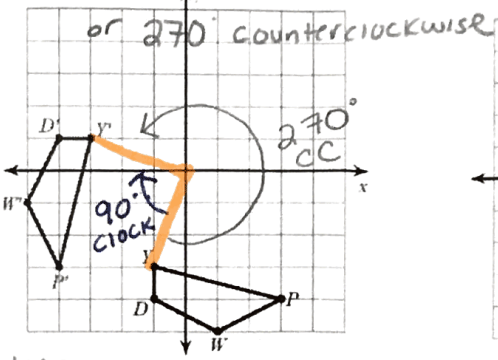
★ check the orientation!
(the lettering)
ORDER

7. Identify the transformation that took place (be specific).

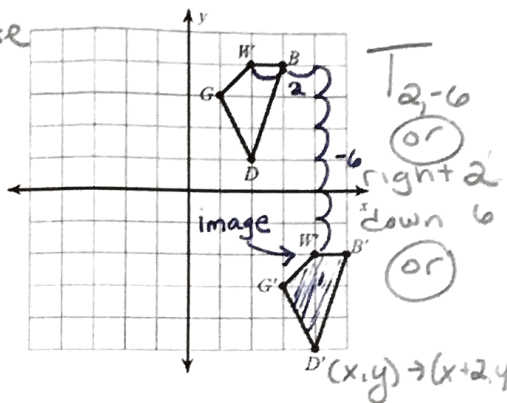
R_{180°



Rotation 90° clockwise



or 270° counterclockwise



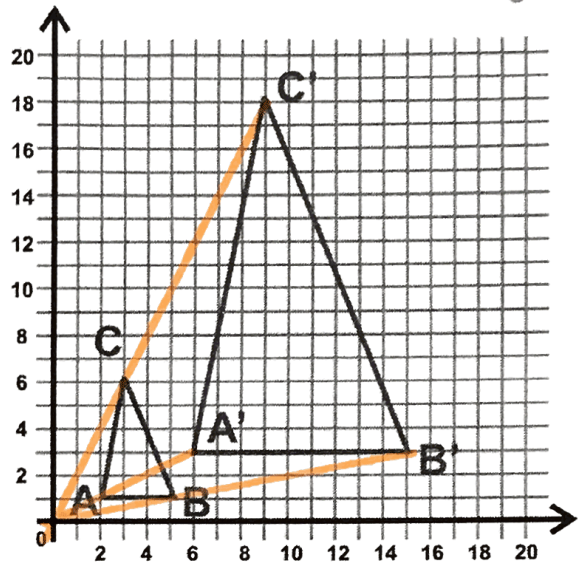
$T_{2,-6}$
right 2
down 6

$D'(x,y) \rightarrow (x+2, y-6)$

Lettering is unchanged \neq reflection

8. What is the scale factor and center of the dilation pictured?

Scale factor: 3 Center: (0,0)



9. HMKS maps onto H'M'K'S'. H(1,3) M(3,3) K(3,-3) S(0,1), H'(-1,3) M'(-3,3) K'(-3,-3) S'(0,1). What is the line of reflection that maps the pre-image onto the image?

y-axis

10. If B(-1,4) maps onto B'(-5,7) after a translation of $T_{h,k}$. What are the values of h and k?

$h = \underline{-4}$
 $k = \underline{3}$

SLIDE

11. List the 3 types of rigid transformations:

Translation, Reflection, Rotation

12. Segment PQ has coordinates P(2,-4) Q(-1,5). After a dilation centered at (0,0), the coordinates of P'Q' are P'(6,-12) and Q'(-3,-15). Write an algebraic description for the transformation that took place.

$(x,y) \rightarrow (3x, 3y)$

13. Use the graph paper to rotate $\triangle ABC$ with A(-5,4) B(-3,4) and C(-3,1) 180° counterclockwise. Graph the pre-image and image.

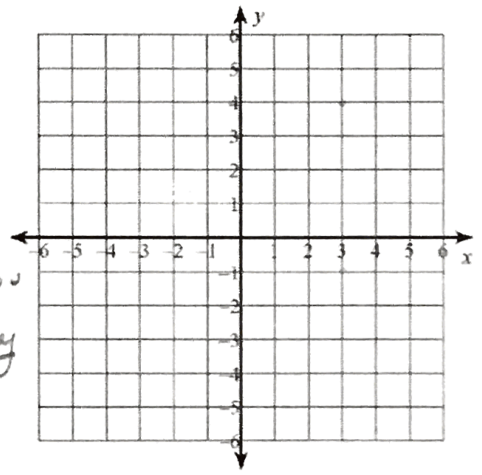
A'(5,-4) B'(3,-4) C'(3,1)

★ you must graph \rightarrow

14. What are the coordinates of ABCD A(-5,1) B(-3,4) C(-1,3) D(-1,2) after a reflection in the line $y=x$? ★ use graph paper IF you DO IT VISUALLY

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

$y=x$



15. Give the endpoints of RT with R(-2,1) and T(3,-6) after a dilation of $\frac{1}{2}$ centered at (3,4).

R' ($\frac{1}{2}, 2\frac{1}{2}$) T' (3,-1)

★ USE THE VISUAL METHOD!! \Rightarrow grap graph paper

If you use additional graph paper, make sure you staple it to the back of this handout.