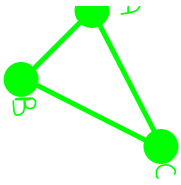
Curriculum Outcomes

(SS3) Demonstrate an understanding of similarity of polygons.

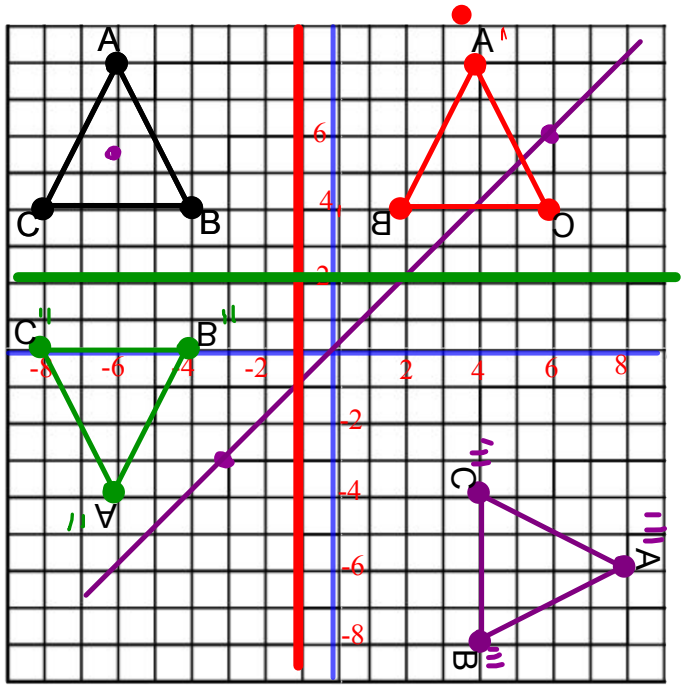
(SS4) Draw and interpret scale diagrams of 2-D shapes.

(SS5) Demonstrate an understanding of line and rotation symmetry.

Student Friendly: Rotating shapes a certain degrees, about specific point.



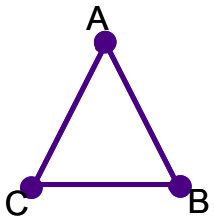
Warm Up



A(-6 , 8)

B(-4 , 4)

C(-8 , 4)



a) Reflect the triangle ABC about the vertical line -1

A'(4 , 8)

B'(2 , 4)

C'(6 , 4)

b) Reflect the triangle ABC about the horizontal line 2

A''(-4, -4)

B''(-4 , 0)

C''(-8 , 0)

c) Reflect the triangle ABC about the oblique line (-3, -3) and (6, 6)

A'''(8, -6)

B'''(4 , -4)

C'''(4 , -8)

d) What is the Order of Rotation of the triangle ABC

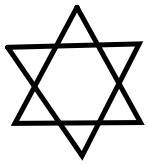
3

e) What is the Angle of Rotation

$\frac{360}{3} = 120°$

Determine if the following shapes have rotational symmetry. If so state the order of rotation and the angle of rotationsymmetry.

1)

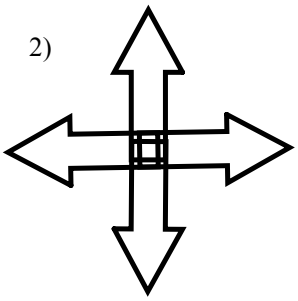


order = 6

$\angle rot = \frac{360}{6}$

$= 60°$

2)



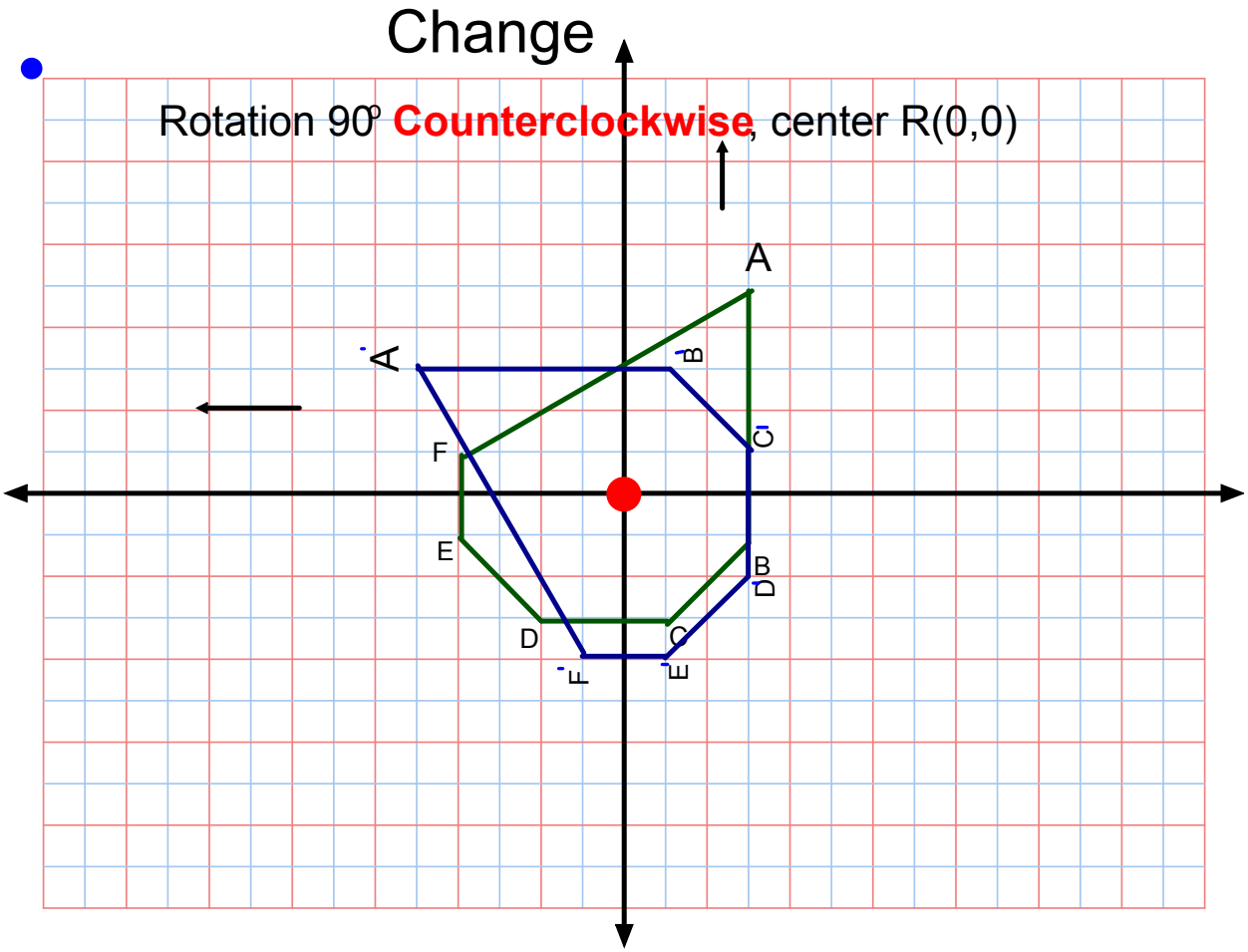
order = 4

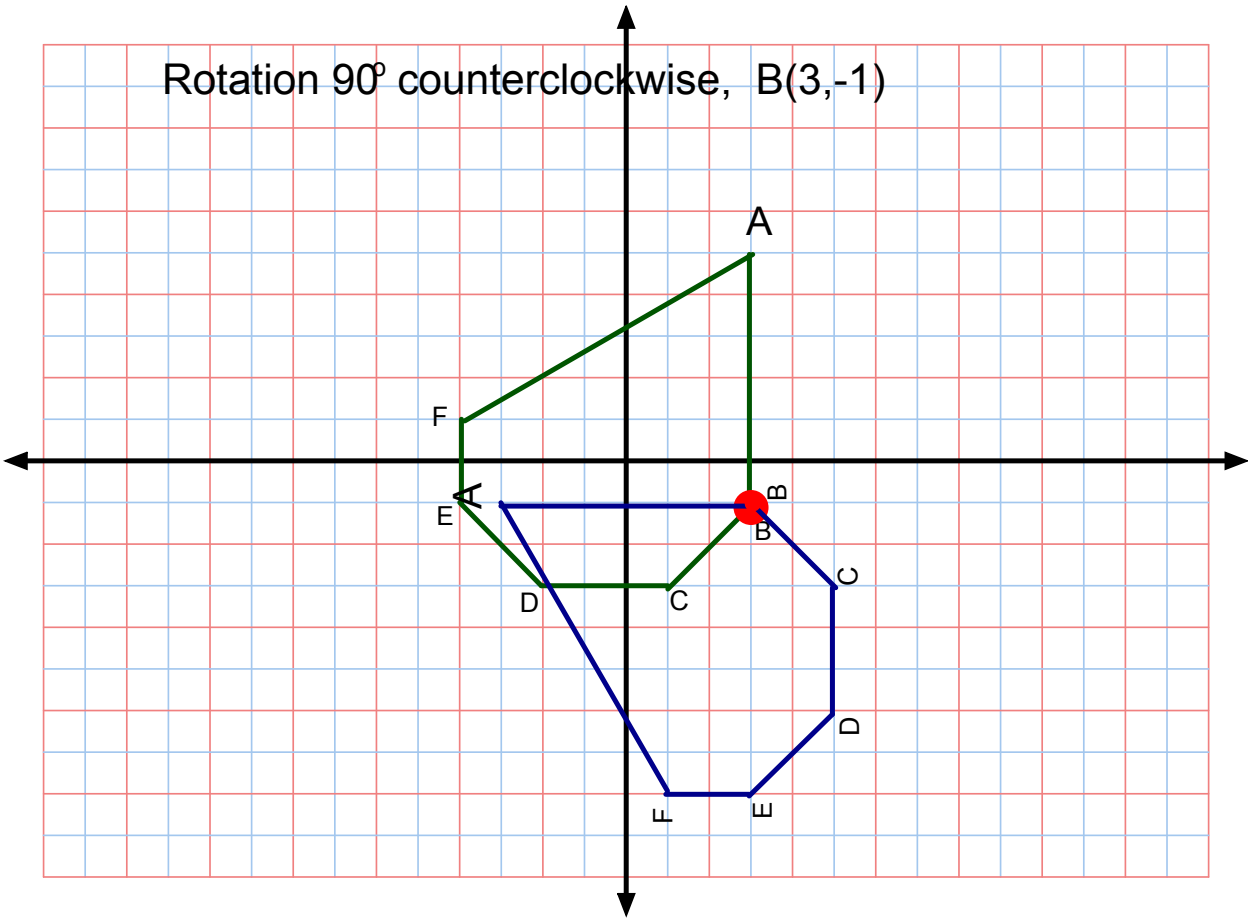
$\angle rot = \frac{360}{4}$

$= 90°$

If I tell you <rot =72°
What is the order?

$order = \frac{360}{72°} = 5$


Change
Rotation 90º Counterclockwise, center R(0,0)
A
B
C
D
E
F
A
B
C
D
E
F

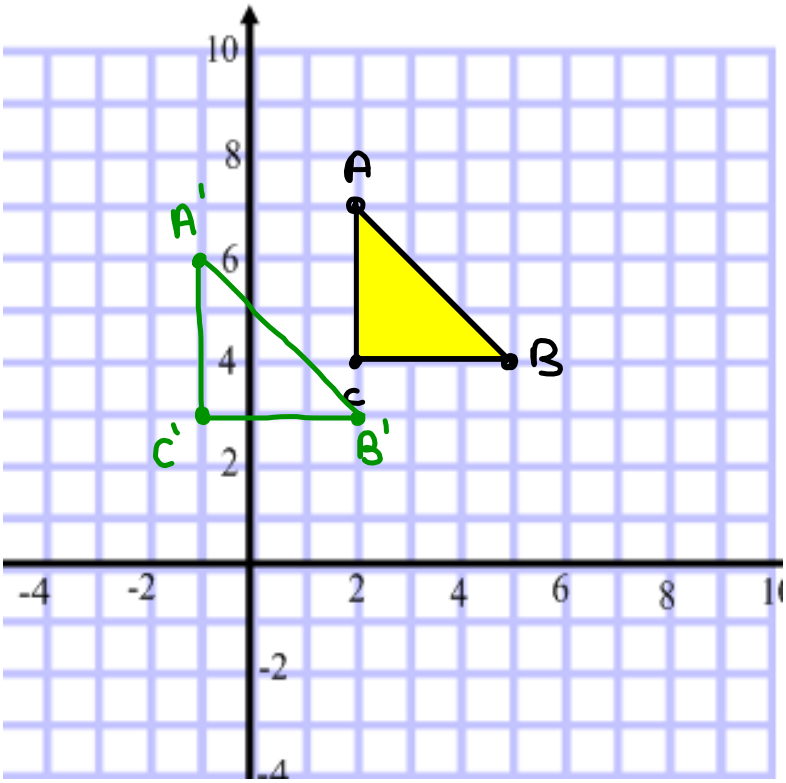

Rotation 90° counterclockwise, B(3,-1)
A
F
E
D
C
B
C
D
F
E

Translation

In Geometry, "Translation" simply means **Moving or Slide**

Every point of the shape must move:

- the **same distance**
- in the **same direction.**



Translate the shape:

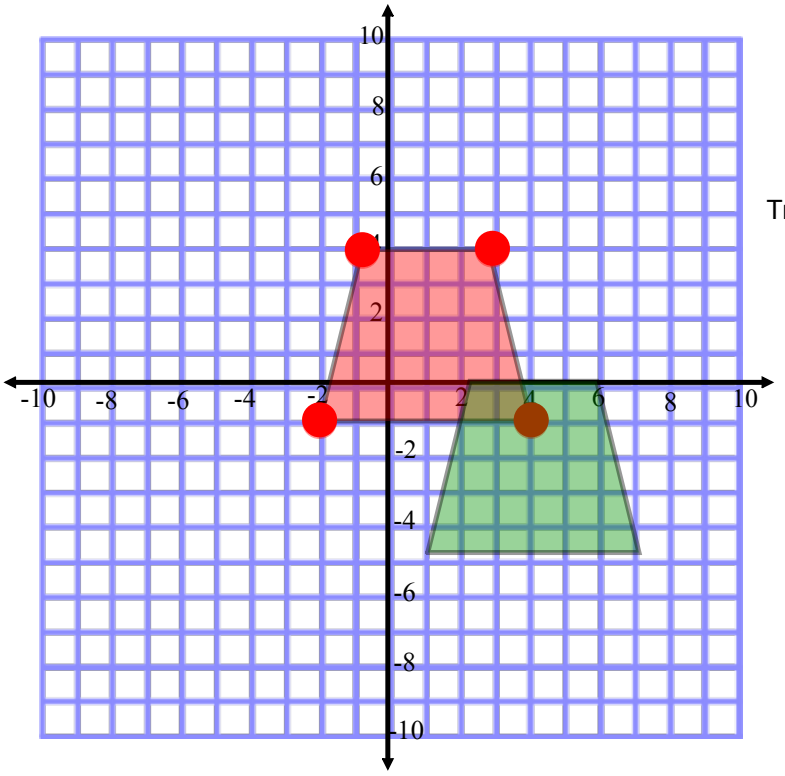
Left 3 units and 1 Unit Down

Notation:

L3 and 1D

or

L3 D1



Translate the shape:

Right 3 units and 4 Unit Down

Notation:

R 3 D 4

R 3 . 4D

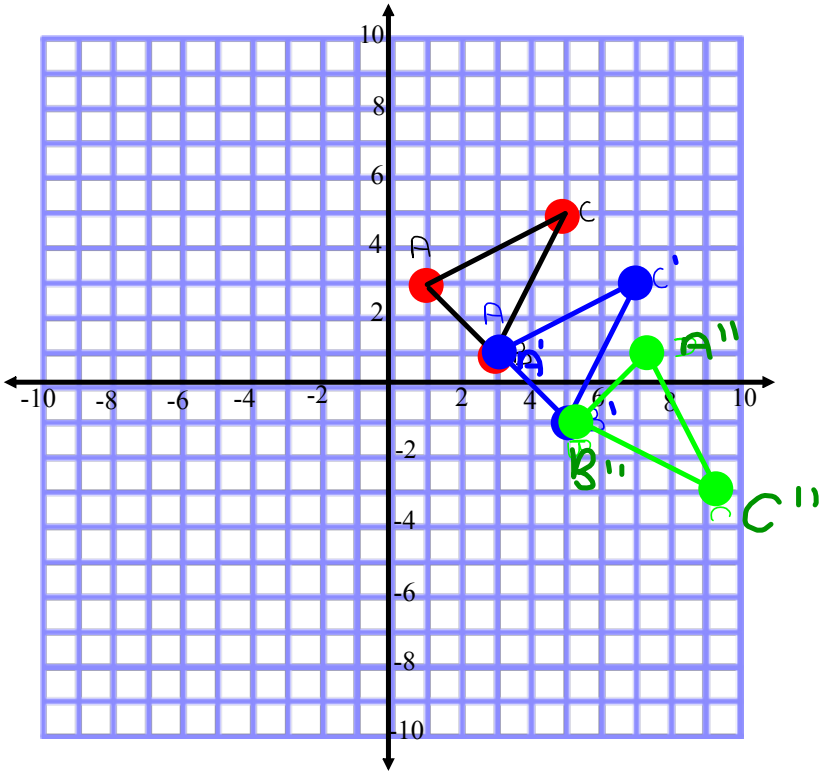
On grid paper plot the following points:
A (1, 3) B (3,1) and C (5,5)

Do the following Transformations:

1. A translation [slide] 2 units right and 2 units down of ABC. } A' B' C'

R 2 D 2

2. A rotation of the triangle A'B'C' clockwise 90° about B' } A'' B'' C''



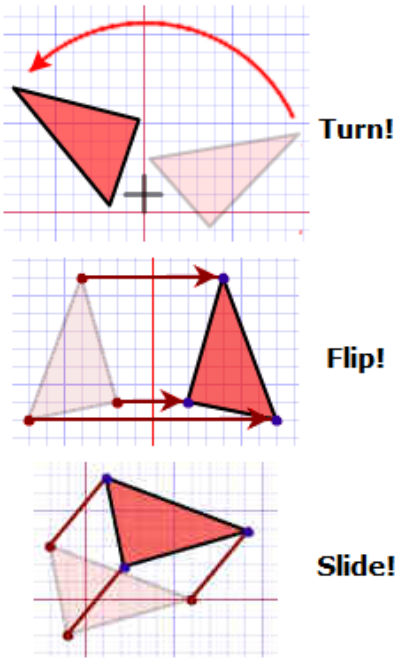
There are three types of transformations:

1. reflections [Line of reflection]
   - Reflect through x-axis
   - Reflect through y-axis

   *oblique two coordinates

2. rotations
   - order of rotation
   - angle of rotation

3. translations [slide]
   Left 3 up 2 [L3U2]
   right 4 down2 [R4 D2]



Class/Homework

Page: 365 - 367

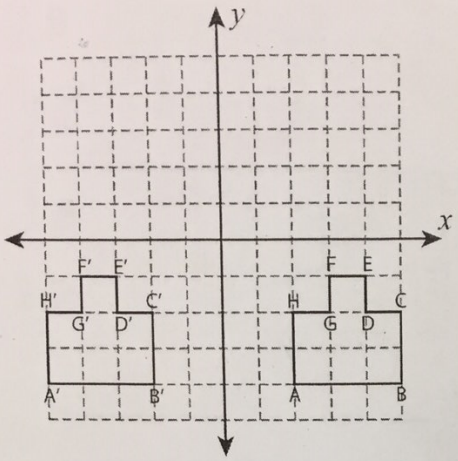
Questions: 4, 5, 6, 7,8

9, 10, 13, 14a,15

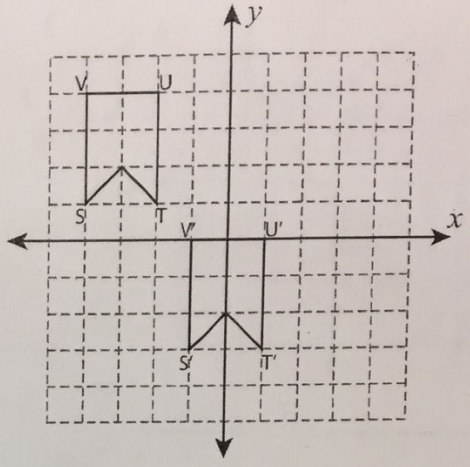
Translations Worksheets (on next page)

Write a rule to describe each translation.

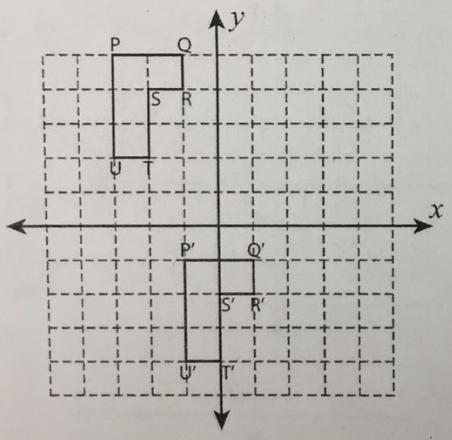
1)



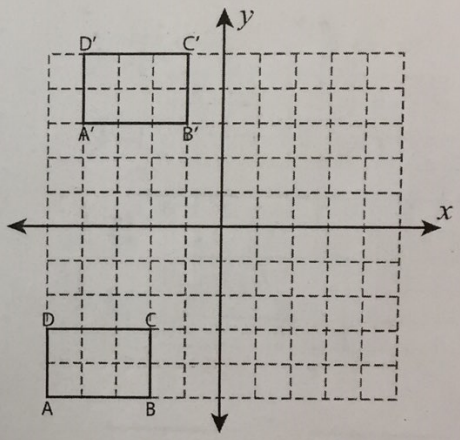
2)



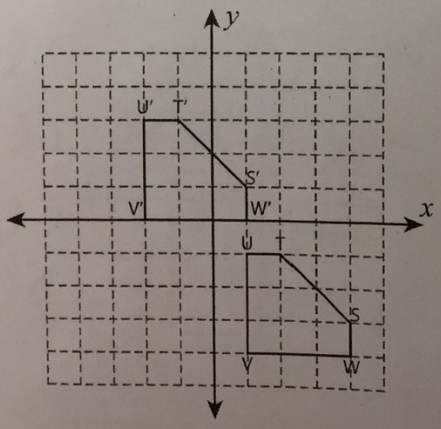
3)



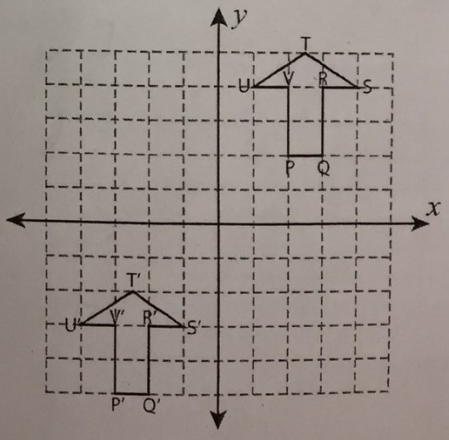
4)



5)



6)



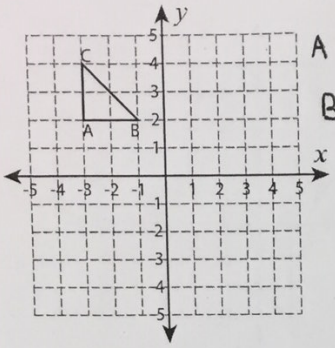
Name: _____

Write the New Coordinates

Sheet 1

Graph the image of each figure after the given translation. Also write the coordinates of the image.

1) 1 unit down and 4 units right

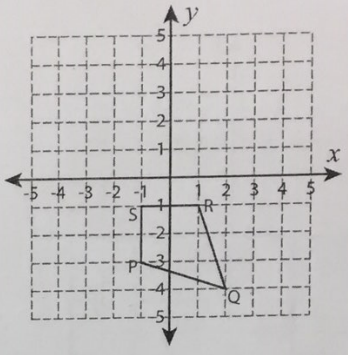


A( )
B( )
C( )

A′: _____ , B′: _____

C′: _____

2) 2 units right and 5 units up

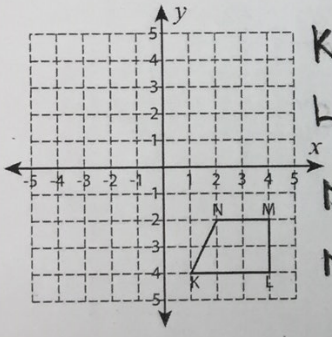


P( )
Q( )
R( )
S( )

P′: _____ , Q′: _____

R′: _____ , S′: _____

3) 6 units up and 6 units left

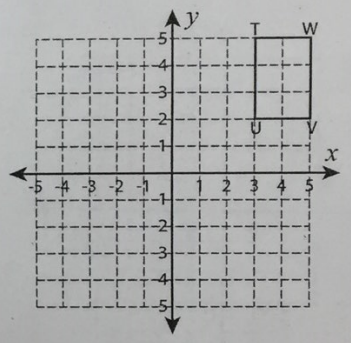


K( )
L( )
M( )
N( )

K′: _____ , L′: _____

M′: _____ , N′: _____

4) 8 units left and 7 units down

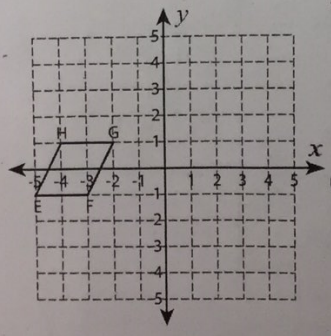


T( )
U( )
V( )
W( )

T′: _____ , U′: _____

V′: _____ , W′: _____

5) 7 units right

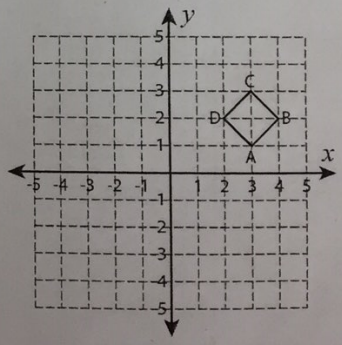


E( )
F( )
G( )
H( )

E′: _____ , F′: _____

G′: _____ , H′: _____

6) 4 units down and 6 units left



A( )
B( )
C( )
D( )

A′: _____ , B′: _____

C′: _____ , D′: _____