

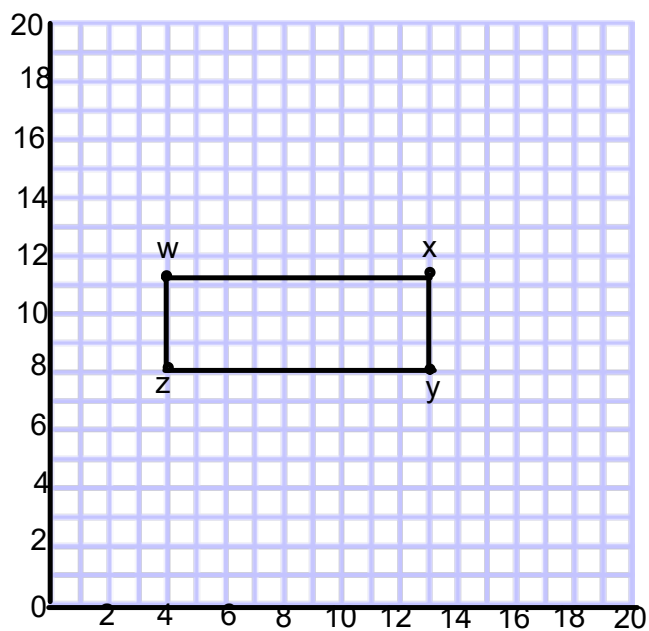
What is the length of the line segment WX



Ch. 8 Transformations

Warm Up Grade 6

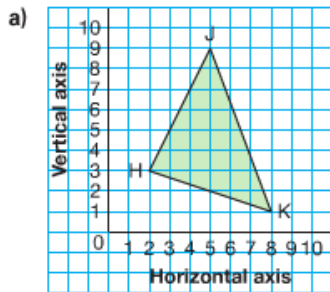
Lesson 2 of e learning



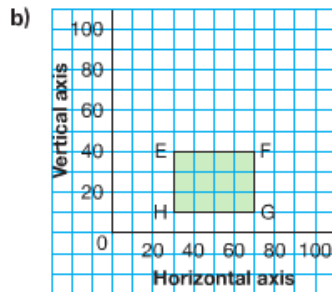
What strategy did you use?

Practice

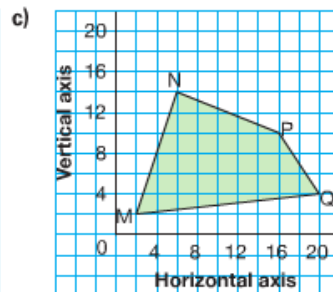
1. Write the coordinates of the vertices of each shape.



- H(2, 3)
- J(5, 9)
- K(8, 1)

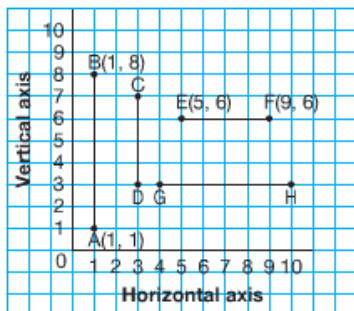


- E(30, 40)
- F(70, 40)
- G(70, 10)
- H(30, 10)



- M(2, 2)
- N(6, 14)
- P(16, 10)
- Q(20, 4)

2. Find the length of each line segment on this coordinate grid.
Describe the strategy you used.



AB is 7 units (I counted the vertical blocks)

or

Given the coordinates I took the y value and subtracted $8 - 1 = 7$ units

CD is 4 units (I counted the vertical blocks)

EF is 4 units (I counted the horizontal blocks)

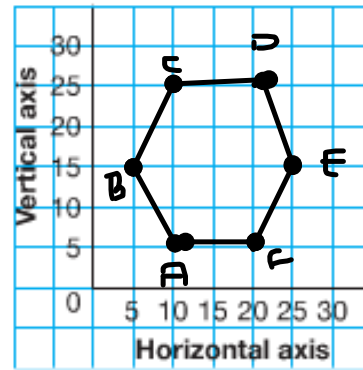
or

Given the coordinates I took the x value and subtracted $9 - 5 = 4$ units

GH is 6 units (I counted the horizontal blocks)

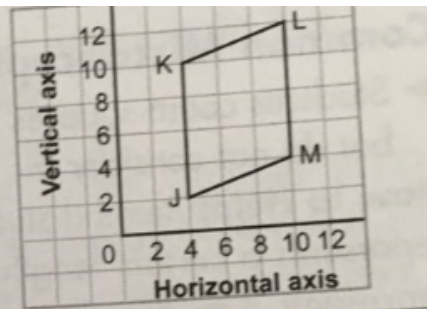
#3) solutions

Hexagon



Parallelogram

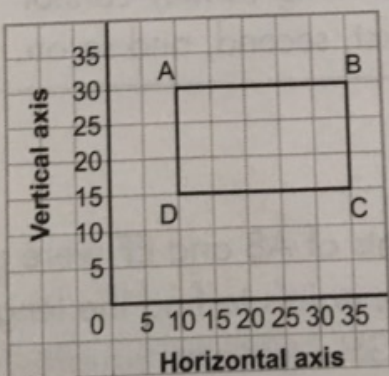
4. a) I used the scale 1 square represents 2 units because each coordinate is divisible by 2.



Elearning Gr 6 Math Ch. 8 L2 Transformation types on grid.notebook

5. Draw a shape on a coordinate grid.
Each vertex should be at a point where grid lines meet.
List the vertices of the shape, in order.
Trade lists with a classmate. Use the list to draw your classmate's shape.

6. a), b)



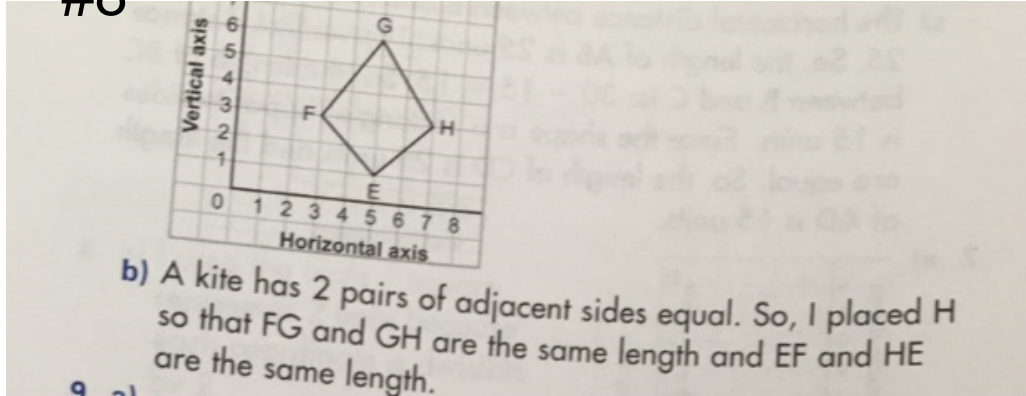
I used the scale 1 square represents 5 units because each coordinate is divisible by 5.

- c) The horizontal distance between B and A is: $35 - 10 = 25$. So, the length of AB is 25 units. The vertical distance between B and C is: $30 - 15 = 15$. So, the length of BC is 15 units. Since the shape is a rectangle, opposite sides are equal. So, the length of CD is 25 units and the length of AD is 15 units.

solutions

H(7,3)

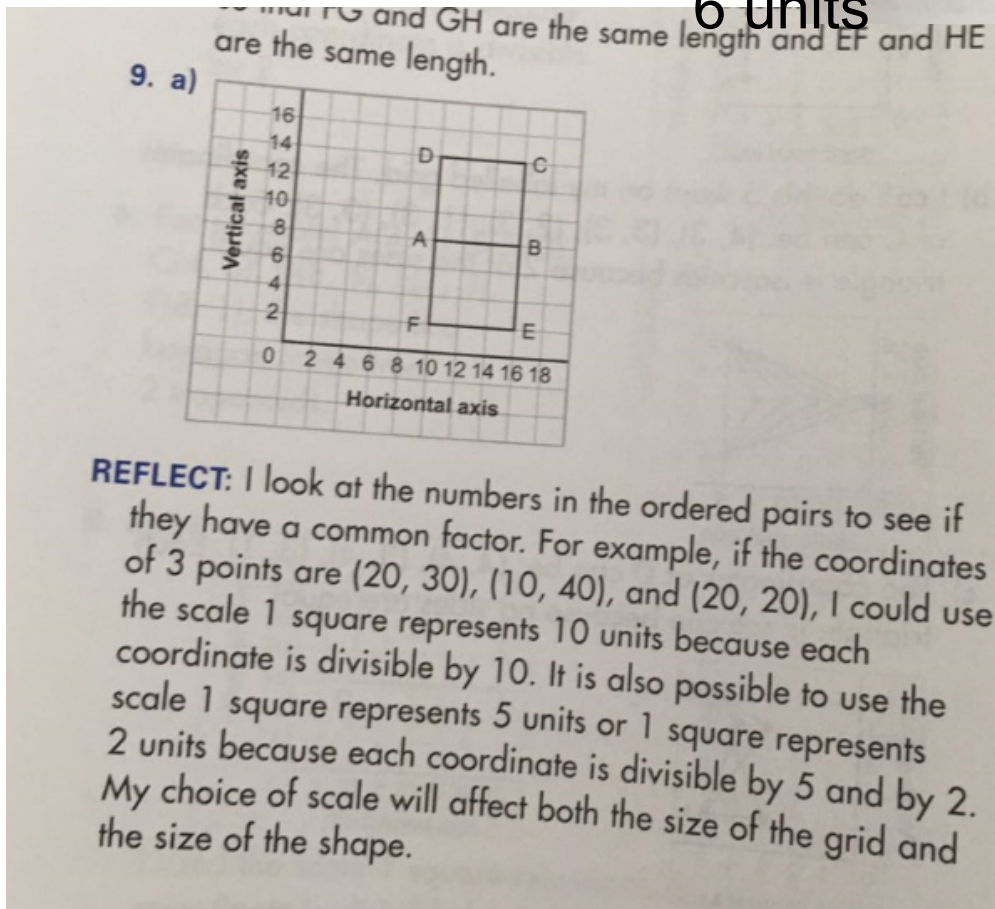
#8



solutions

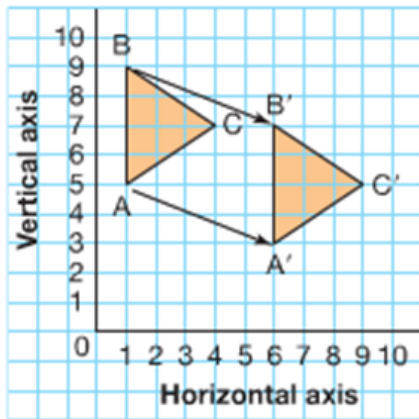
6 units

? C(16, 14) and D(10, 14)
E(16, 2) and F(10, 2)



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Translation (slide) – slides a shape from one location to another. A translation arrow joins matching points on the shape and its image.

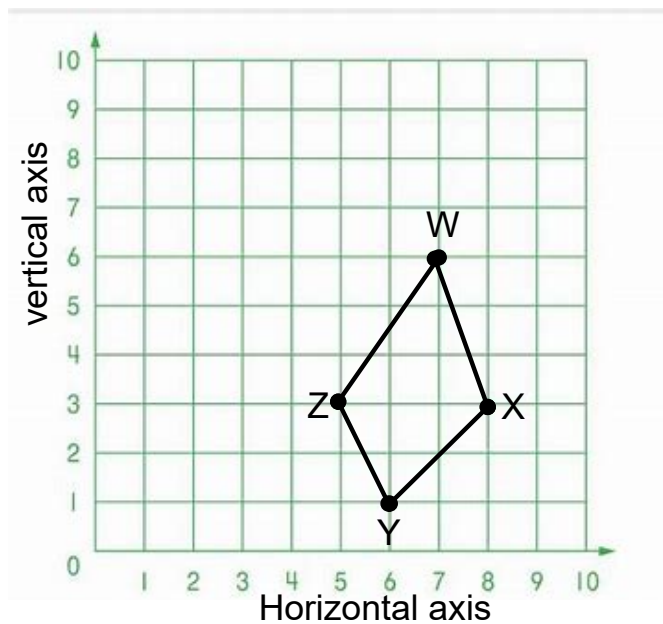


Given by direction and amount of blocks

This image ABC is translated
Down 2, Right 5

That means every vertex in original is moved the same direction

New image has prime symbol on vertices ' '



Translate shape WXYZ
Up 3, left 4 and name new shape W'X'Y'Z'

Write the coordinates for WXYZ and the translated shape

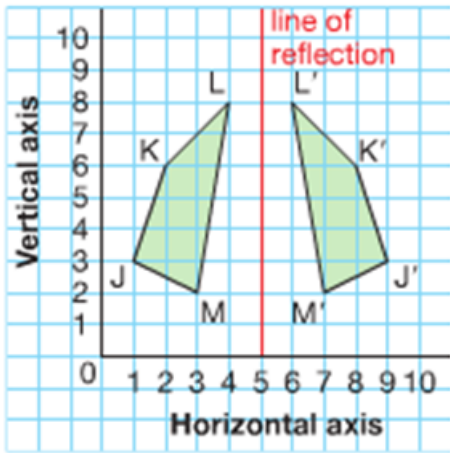
W(__, __)

X(__, __)

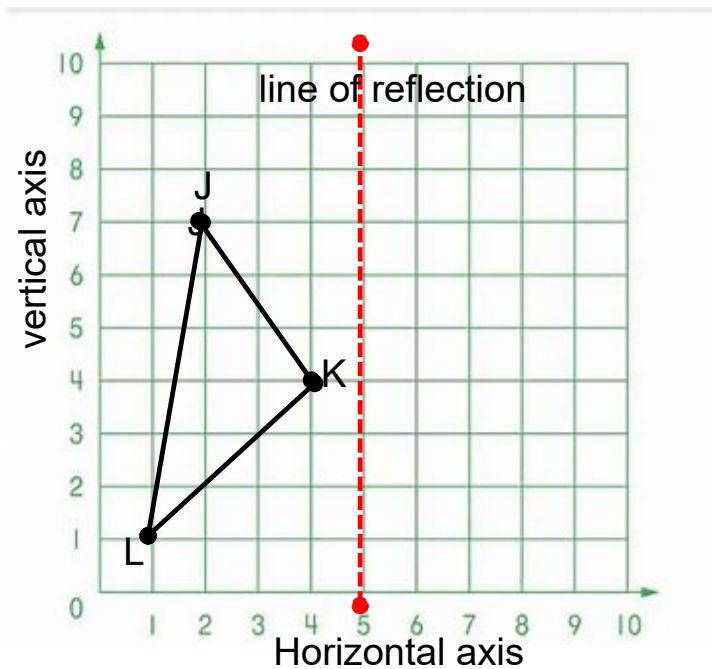
Y(__, __)

Z(__, __)

Reflection (Flip) – Reflects a shape in a line of reflection to create a reflection image.
-face opposite ways



- keep the vertices the same distance from the mirror
(when vertical or horizontal mirror)
- Flip coordinates when mirror is diagonal



Reflect the shape JKL across red line of reflection name new shape J'K'L'

Write the coordinates for JKL and the translated shape

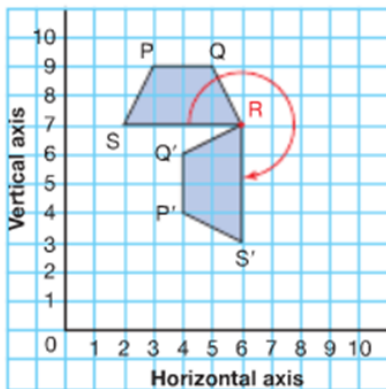
J(__, __)

K(__, __)

L(__, __)

Won't do until I can model in class

Rotation (turn) – turns a shape about a point of rotation in a given direction.



-We trace the original shape and rotate then paper. Poke holes at the vertices and redraw.

-will be given point of rotation in grade 6



So, we can name fractions of turns in degrees.

A rotation can be clockwise or counterclockwise.



A $\frac{1}{4}$ turn is a 90° rotation.

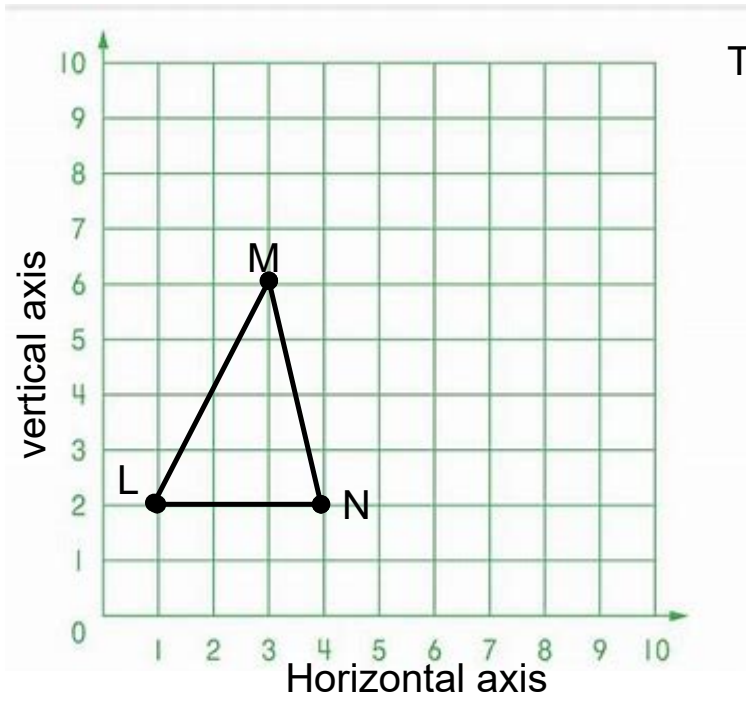


A $\frac{1}{2}$ turn is a 180° rotation.

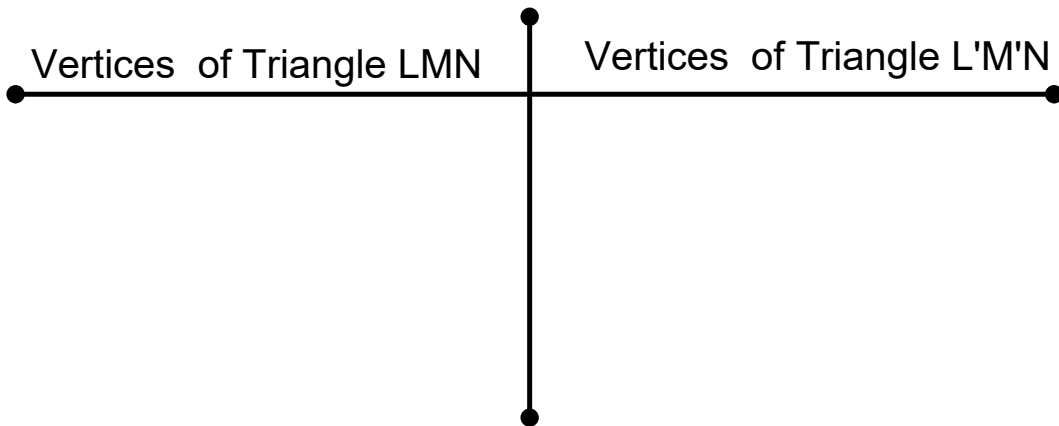


A $\frac{3}{4}$ turn is a 270° rotation.

Above trapezoid PQRS is rotated about vertex R, 270° . or $\frac{3}{4}$ turn
To give image P'Q'R'S' (Notice R is the same)



Translate U3 R4



Class/Homework

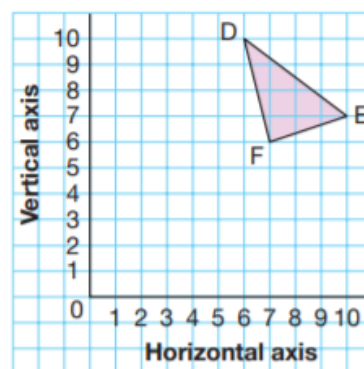
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#3,

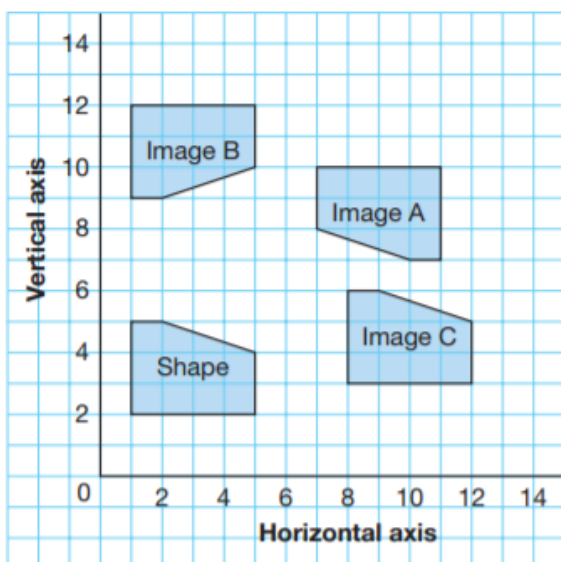
If you have grid paper you can try
#1 BUT you don't need to

Use tracing paper or a Mira when it helps.

1. Copy this triangle on a grid.
 - a) Draw the image of $\triangle DEF$ after the translation 6 squares left and 1 square down.
 - b) Write the coordinates of the vertices of the triangle and its image.
How are the coordinates related?
 - c) Another point on this grid is $G(10, 2)$.
Use your answer to part b to predict the coordinates of point G' after the same translation.



3. This diagram shows a shape and its image after 3 different transformations.



Identify each transformation.

Explain how you know.

- a) the shape to Image A
- b) the shape to Image B
- c) the shape to Image C