



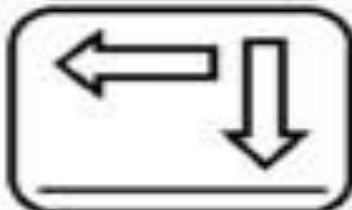
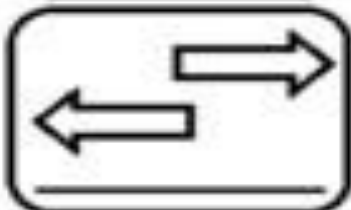
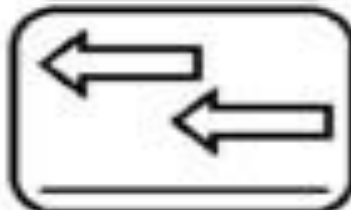
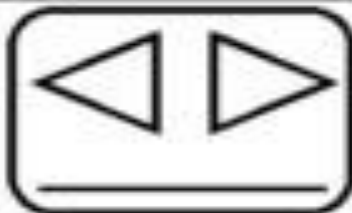
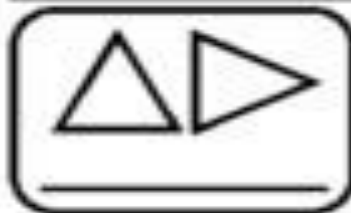
Name \_\_\_\_\_

Date \_\_\_\_\_

# SLIDE, FLIP AND TURN

Directions:

Look at the pictures below and decide if the shape has slid, flipped or turned. Write the correct answer on the line below.



Memorize.



When a shape is turned over  
a straight line,  
it makes a mirror image.  
It is called a "f..." or a "r...".

When a shape moves along a straight line,  
without turning, it is translated  
from one position(place)to another.  
This movement is called a "t..." or a "s...".

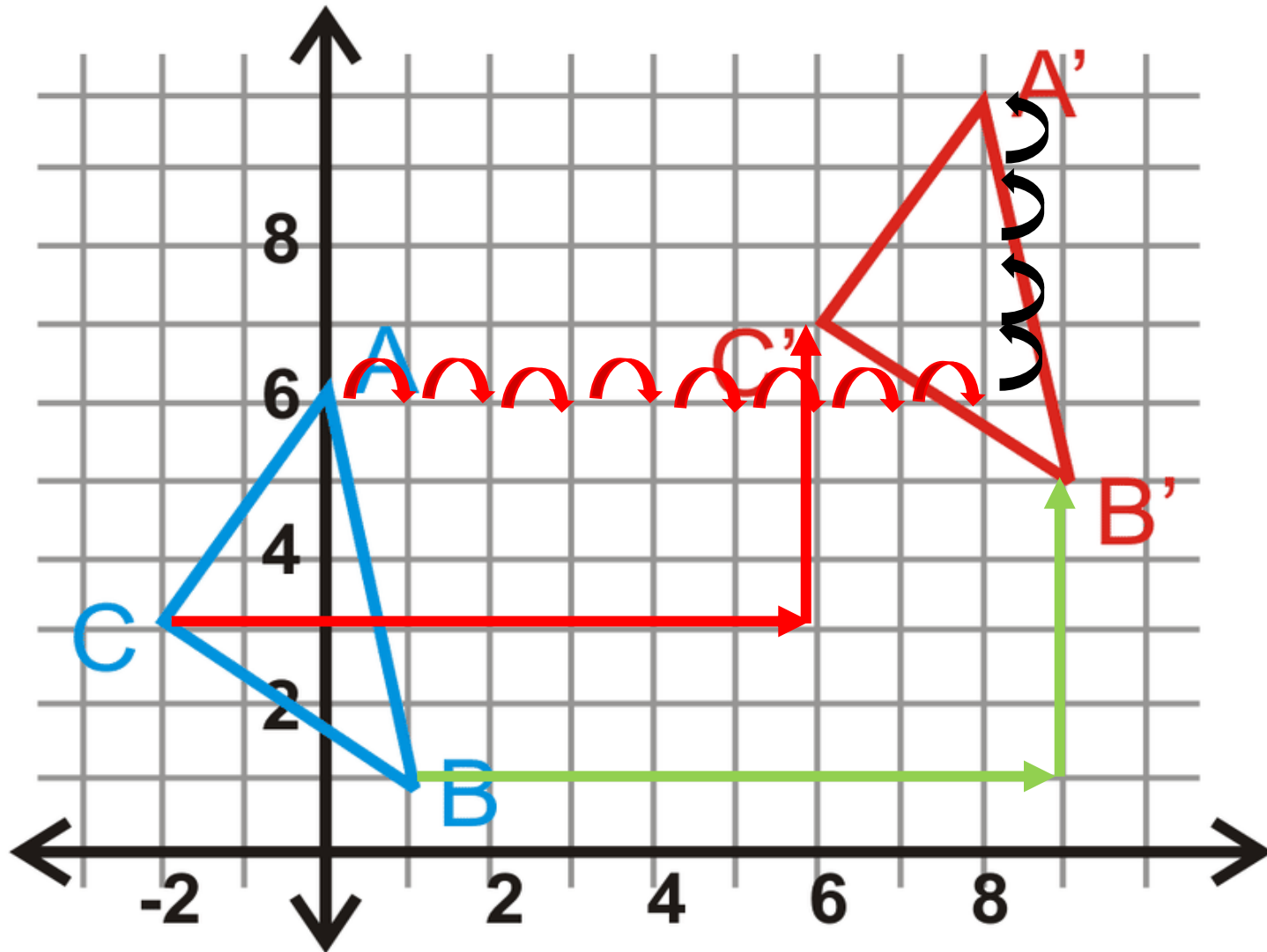
When a shape rotates  
around a point,  
it makes a "t..." or a "r...".

What does "translation" mean?

What does "translation of a shape in math" mean?



# How to translate a figure:

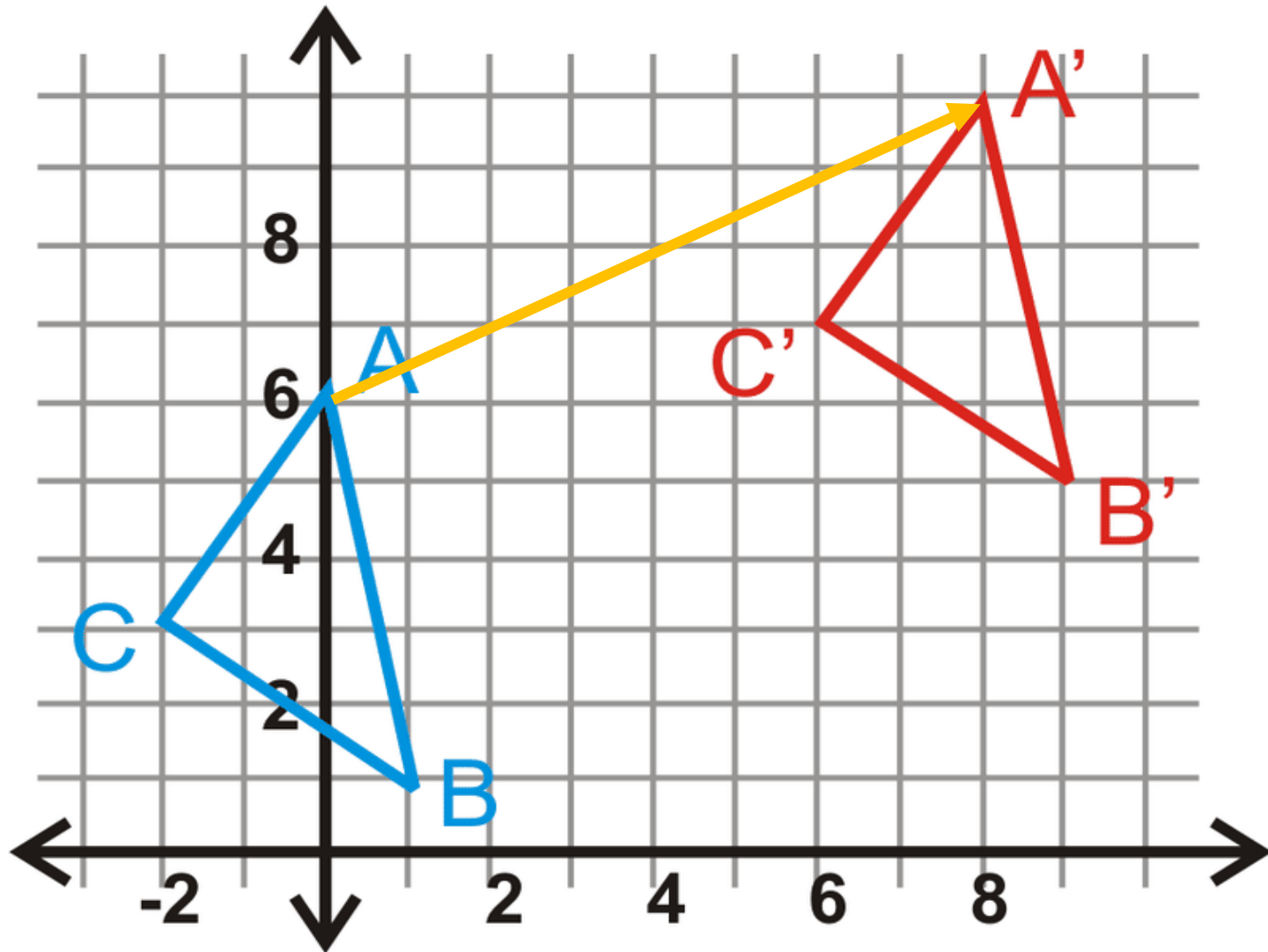


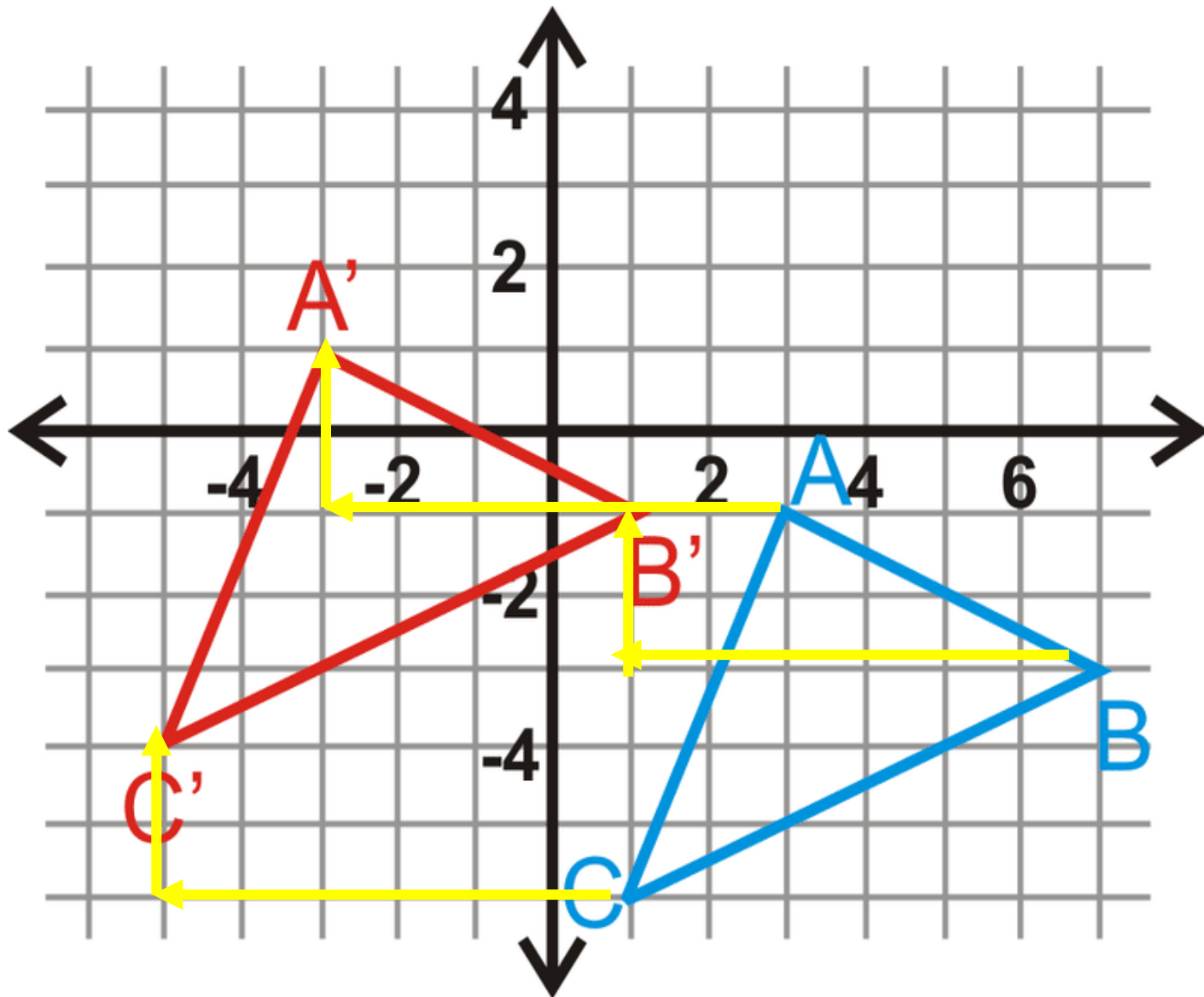
We want to translate the figure  $ABC$ .

The instruction is:  
8 squares right  
4 squares up

We must follow the instruction for all the points.

# translation arrow





We want to translate the figure ABC.

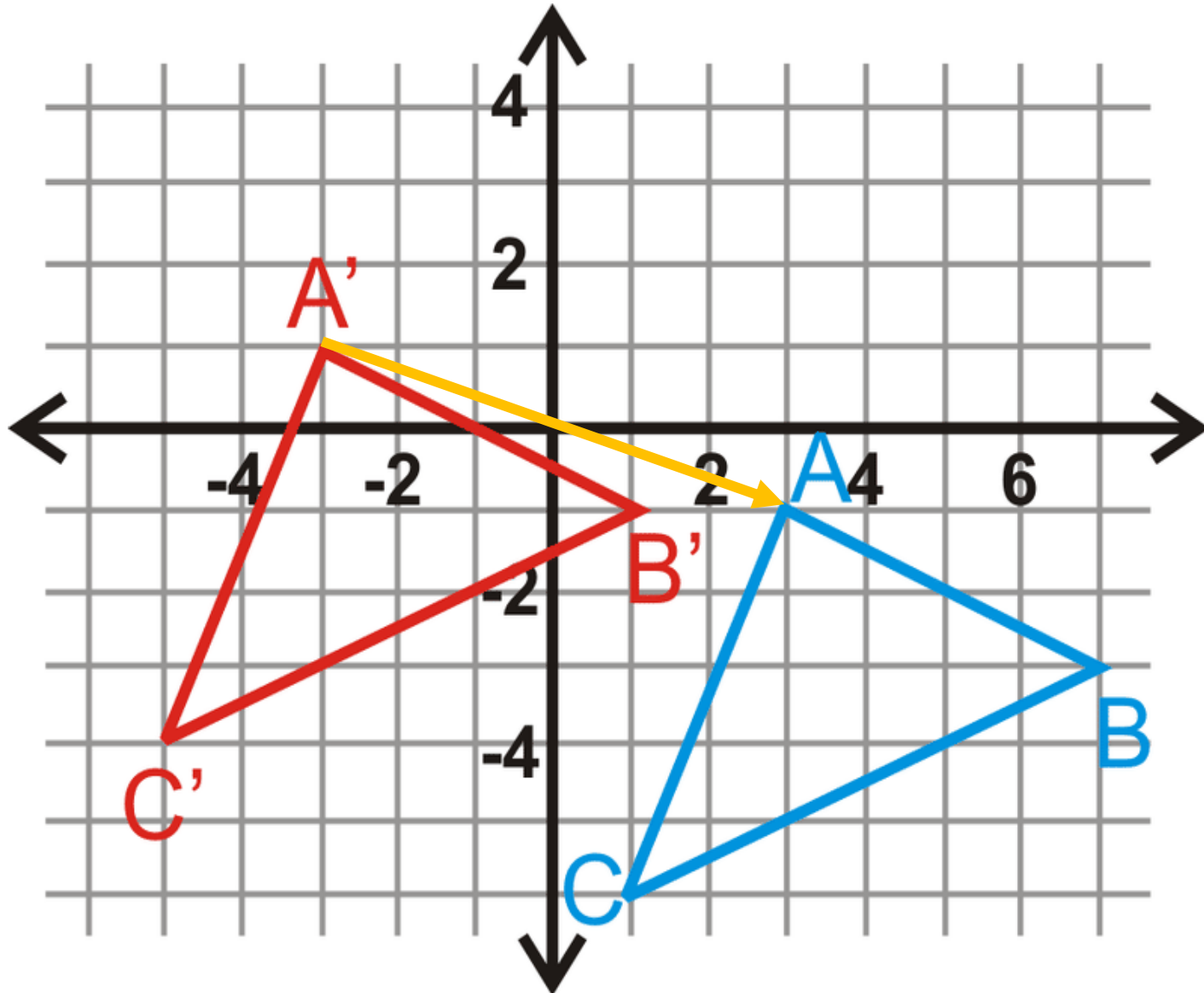
The instruction is:

6 squares left

2 squares up

We must follow the instruction for all the points.

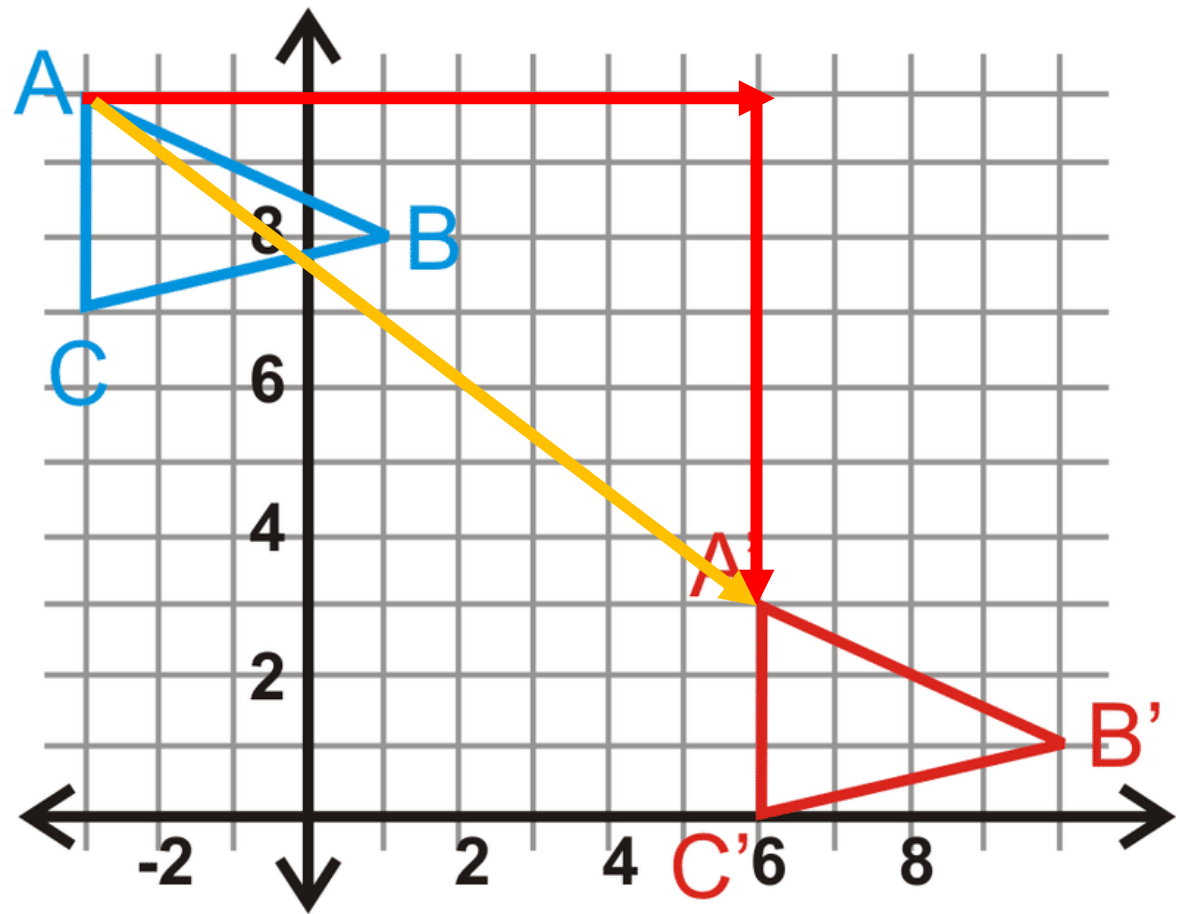
# translation arrow





# Remember

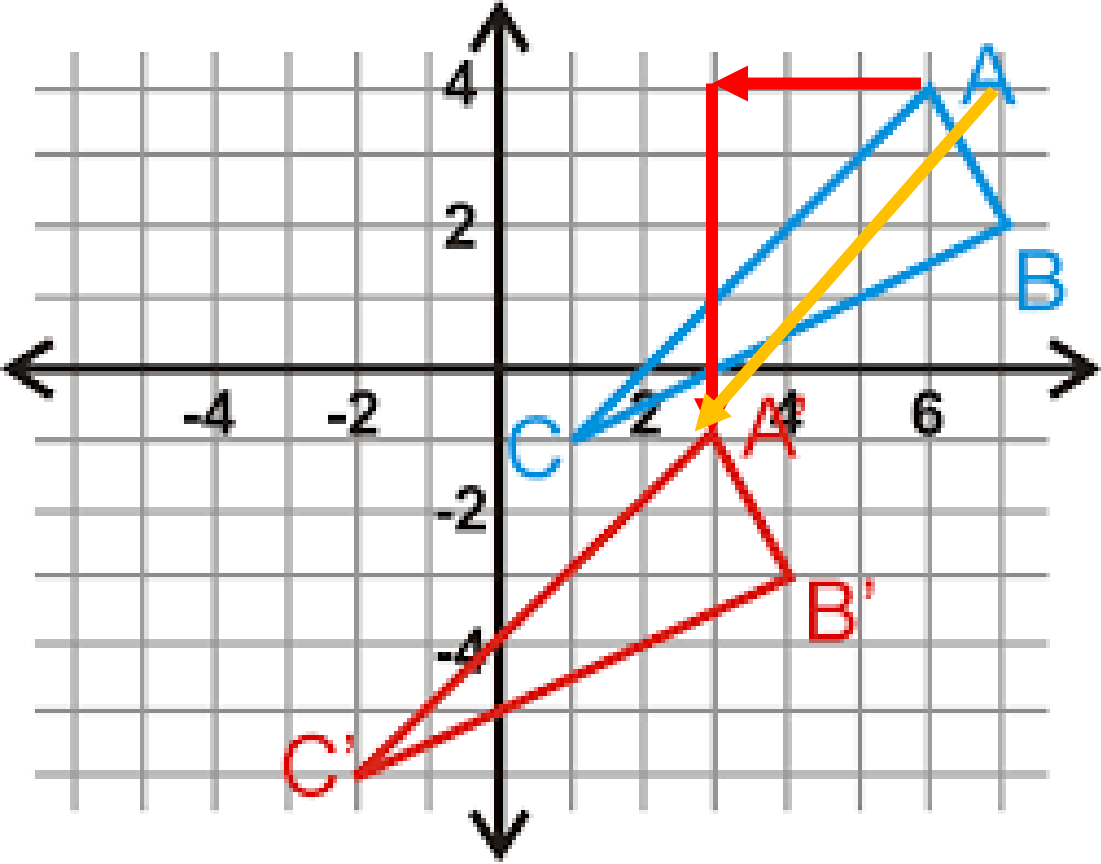
First, move to the  
right/left.  
Then move up/down.



What translation  
is used?

9 squares right  
7 squares down

translation arrow

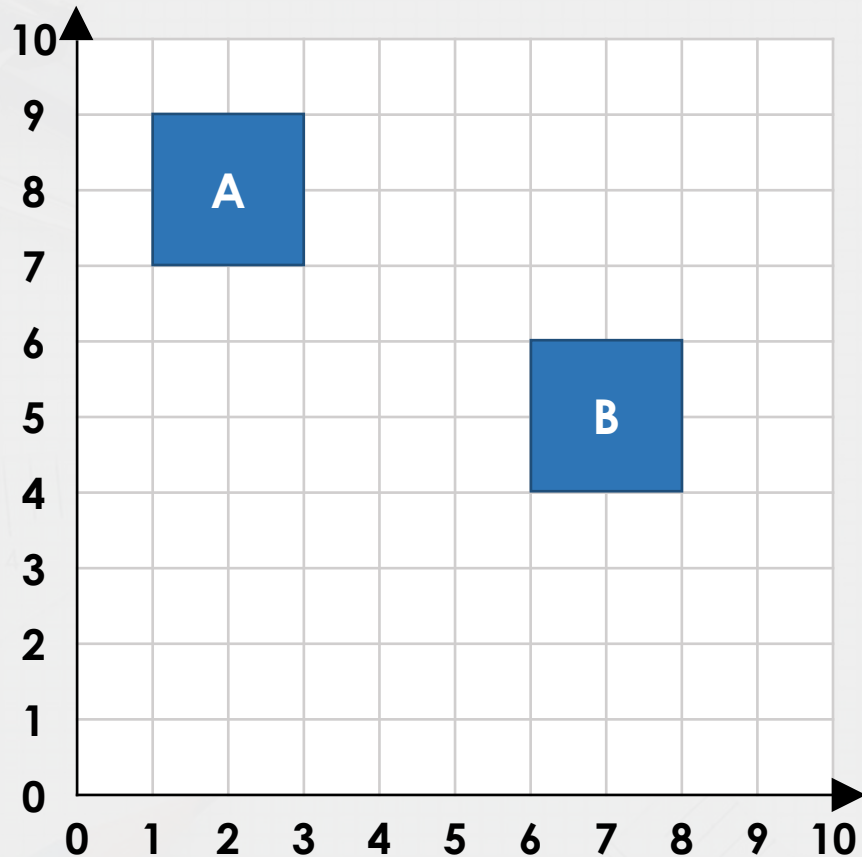


3 squares left  
5 squares down

translation arrow

## Introduction

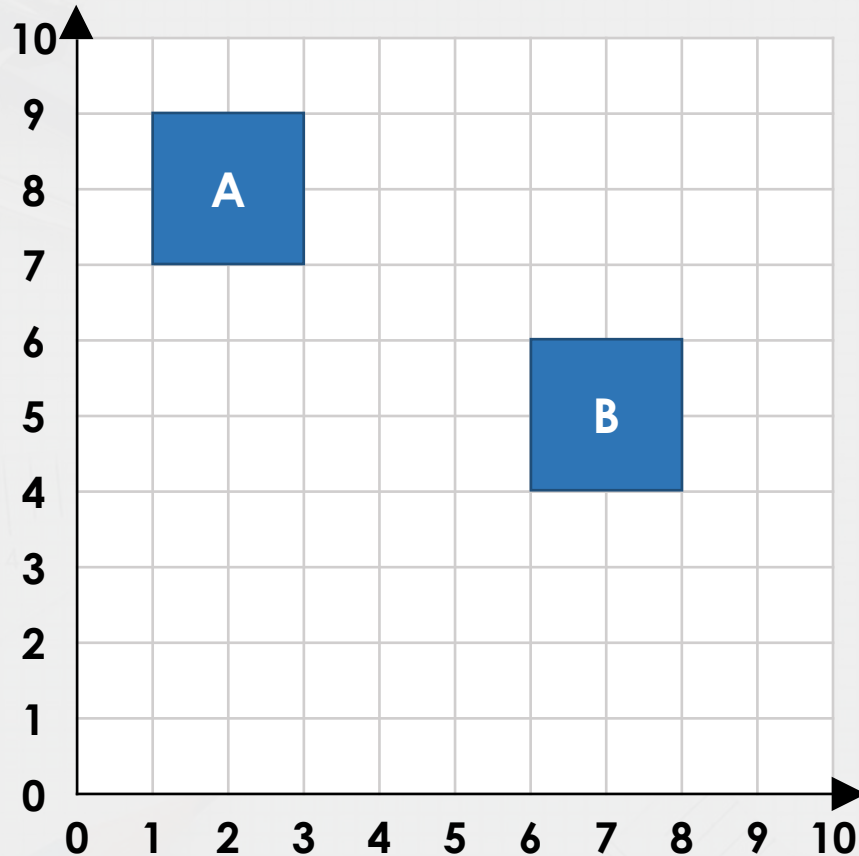
Look at the shapes on the coordinate grid below.



1. What are the coordinates for Shape A?
2. What are the coordinates for Shape B?
3. Describe how Shape A has been translated to Shape B.

## Introduction

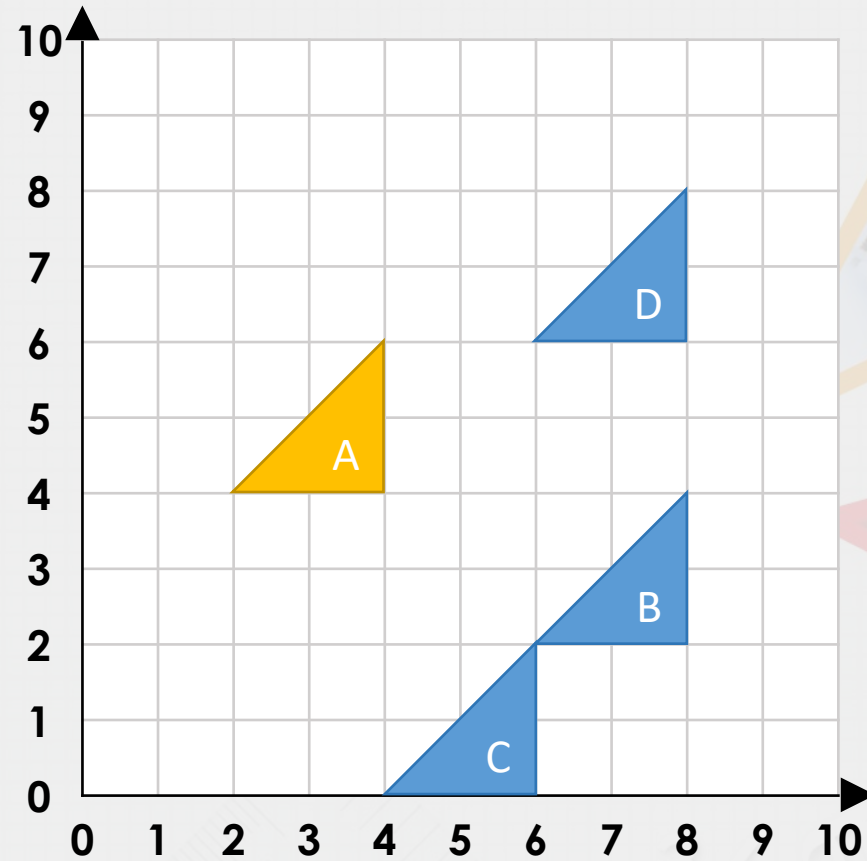
Look at the shapes on the coordinate grid below.



1. What are the coordinates for Shape A?  
**(1, 7) (1, 9) (3, 7) (3, 9)**
2. What are the coordinates for Shape B?  
**(6, 4) (6, 6) (8, 4) (8, 6)**
3. Describe how Shape A has been translated to Shape B.  
**(5 right, 3 down)**

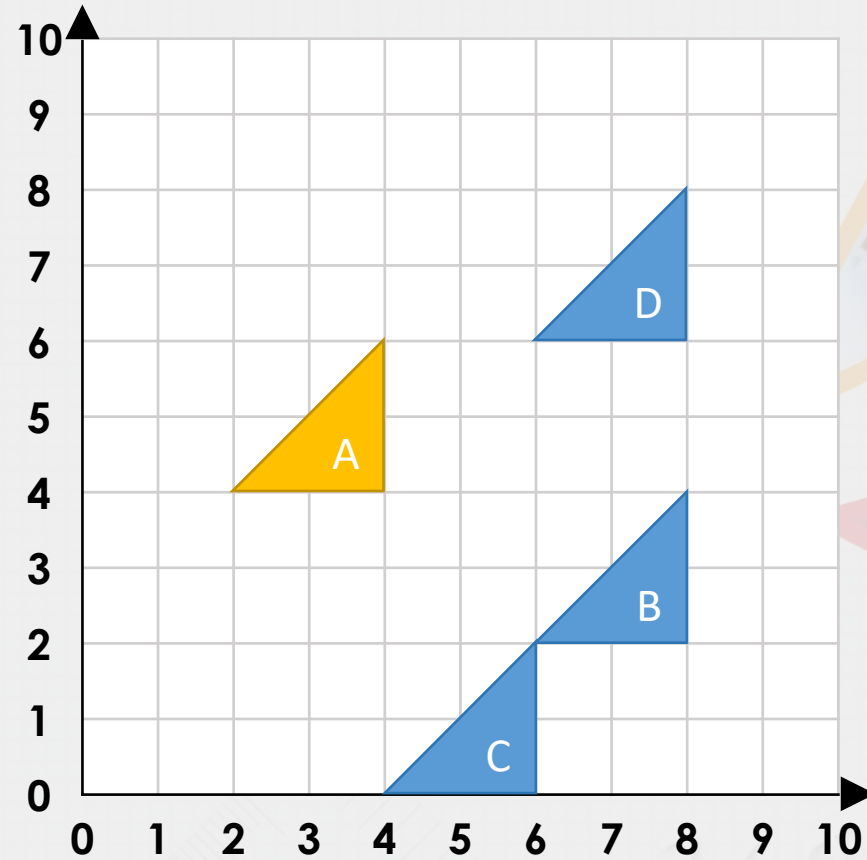
## Varied Fluency 1

A shape is translated 4 right and 2 down. What are the coordinates of the vertices of the correctly translated shape?



## Varied Fluency 1

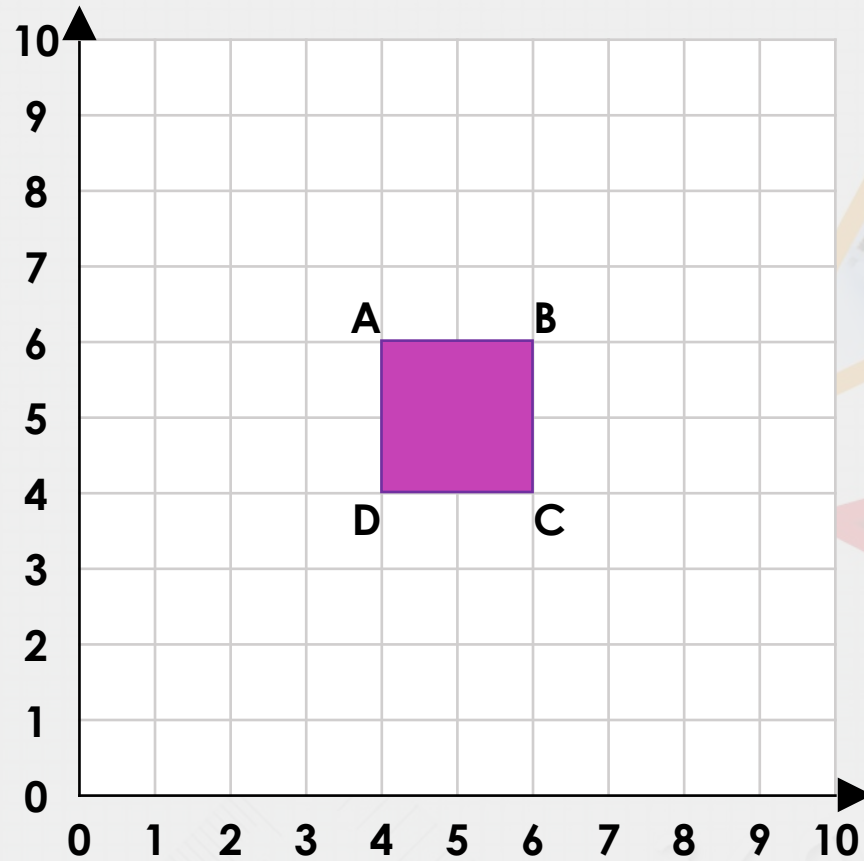
A shape is translated 4 right and 2 down. What are the coordinates of the vertices of the correctly translated shape?



**Shape B:**  
 $(6, 2)$   $(8, 2)$   
 $(8, 4)$

## Varied Fluency 2

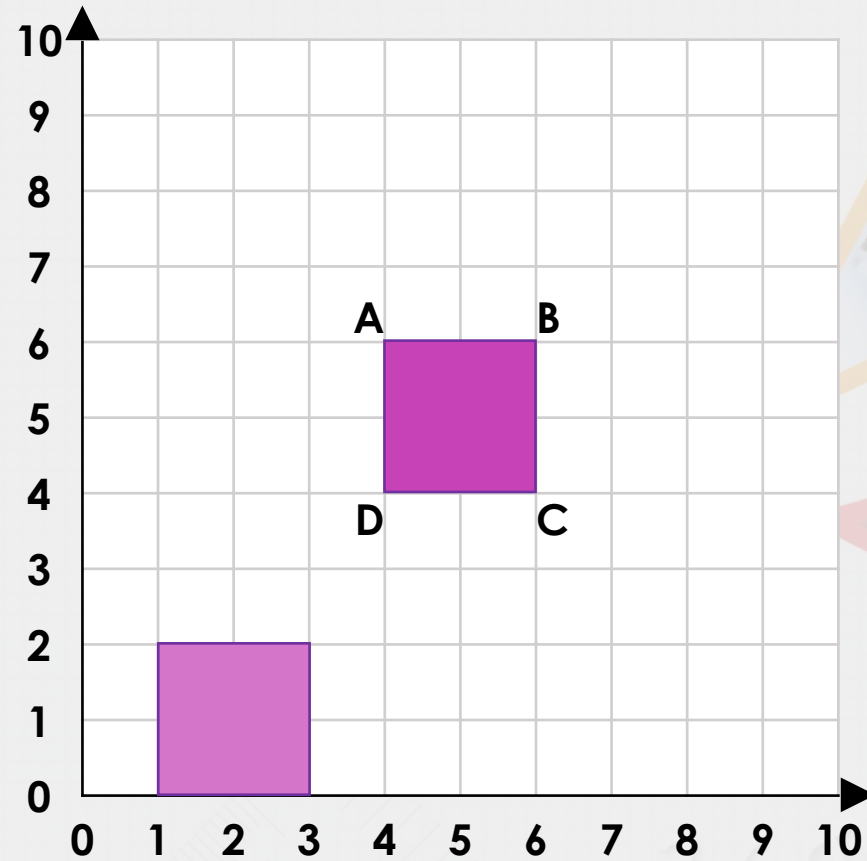
**True or false? If the square is translated 3 left and 4 down, the new coordinates of vertex D will be (0, 2).**





## Varied Fluency 2

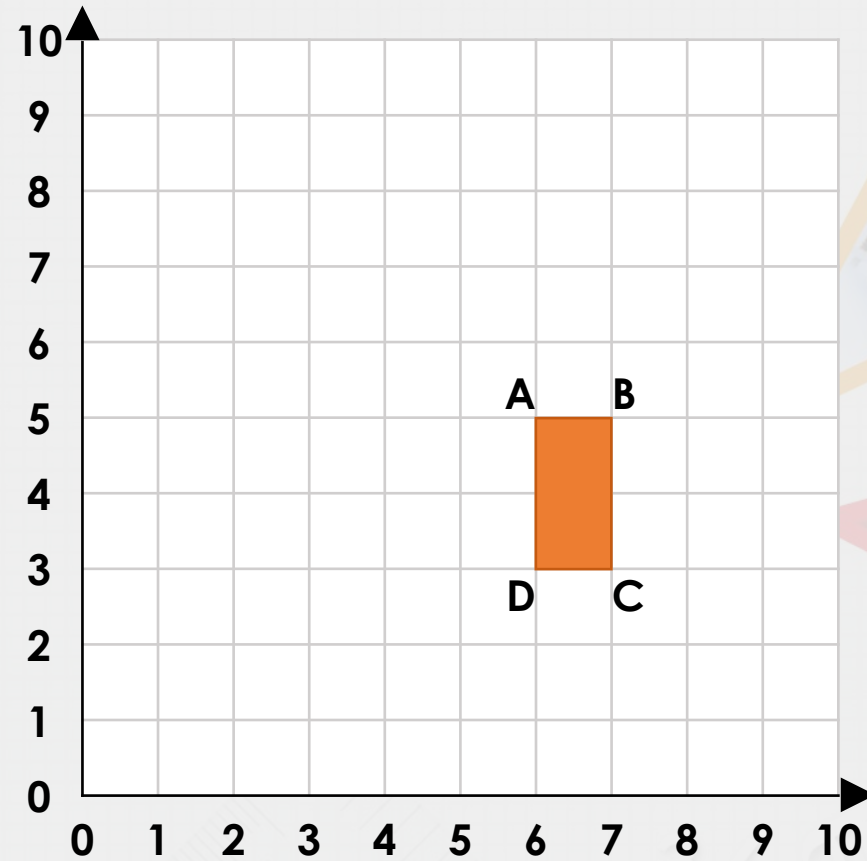
**True or false? If the square is translated 3 left and 4 down, the new coordinates of vertex D will be (0, 2).**



**False; it will  
be (0, 1)**

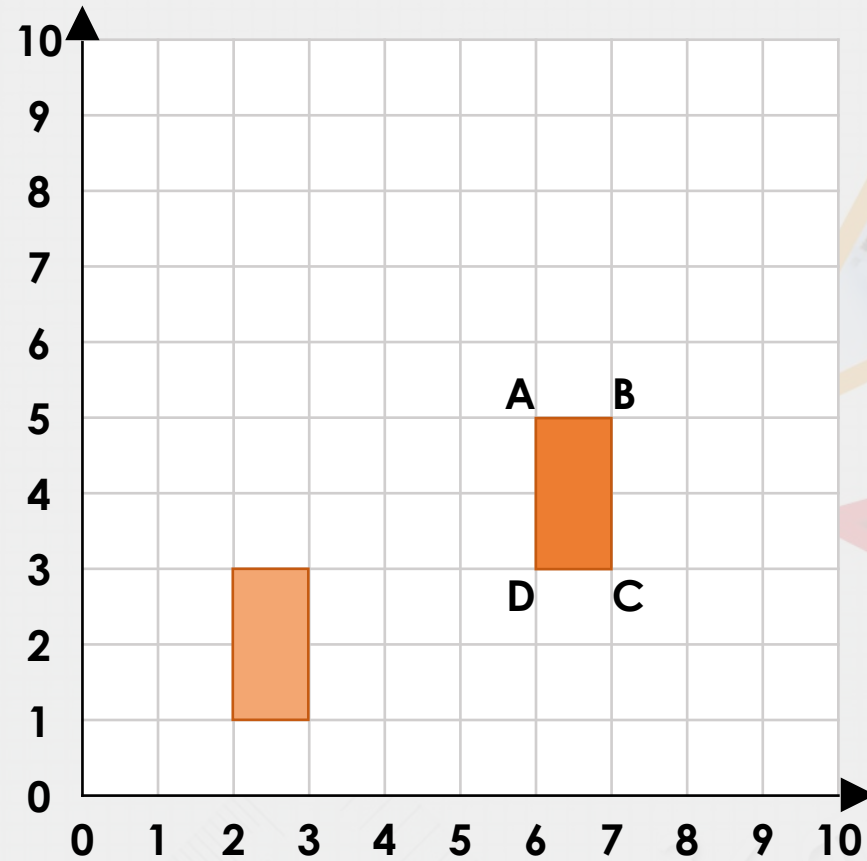
### Varied Fluency 3

This shape has been translated 4 right and 2 up. What are the original coordinates of each vertex?



### Varied Fluency 3

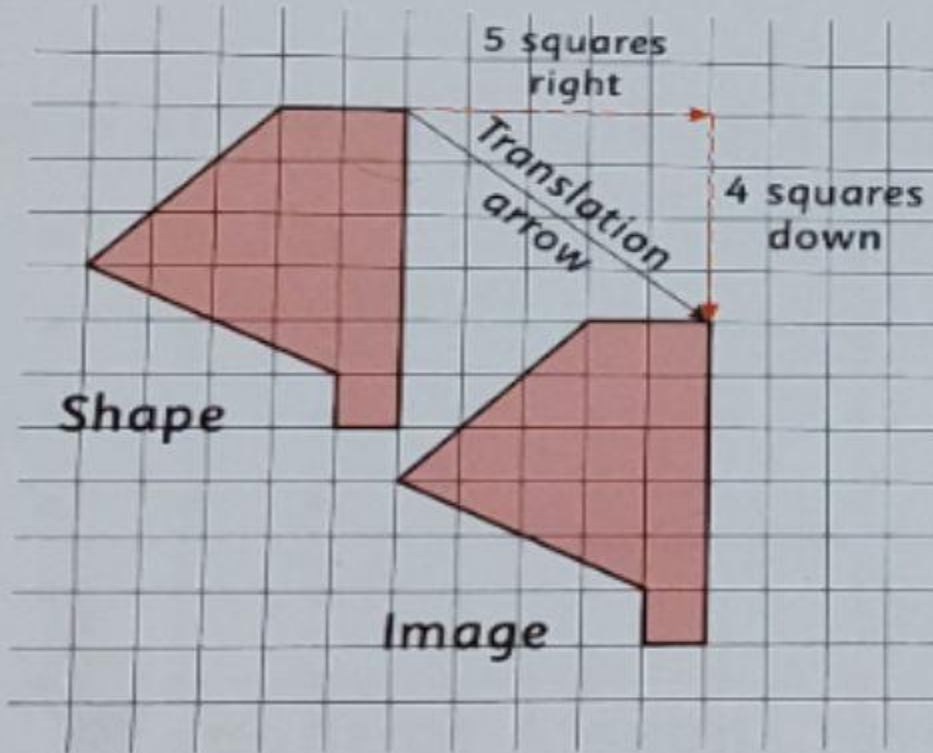
This shape has been translated 4 right and 2 up. What are the original coordinates of each vertex?



- A (2, 3)
- B (3, 3)
- C (3, 1)
- D (2, 1)

translated from one position to another.  
The movement is a translation or a slide.  
The translation below is:

5 squares right and 4 squares down.

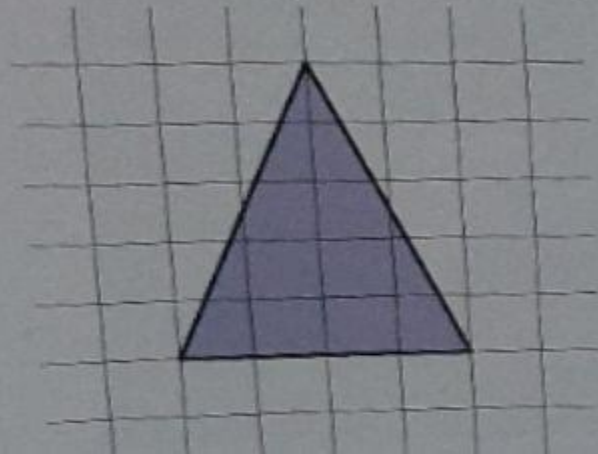


We say how many squares right or left before we say how many up or down.

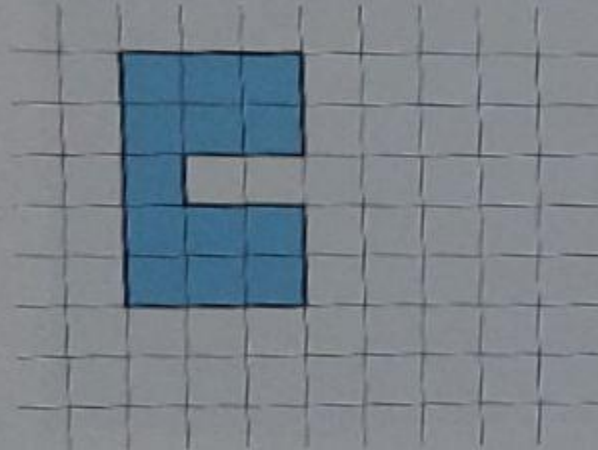


Describe the position and orientation of the image.

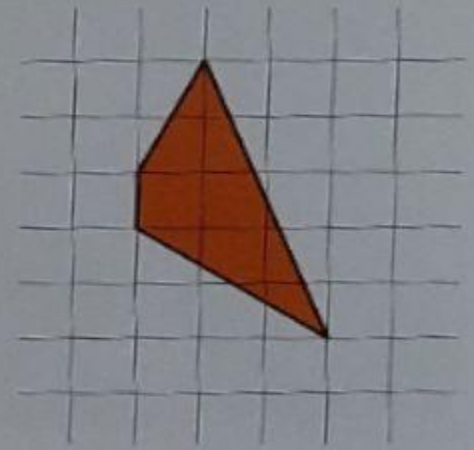
a) 7 squares left  
and 3 squares up



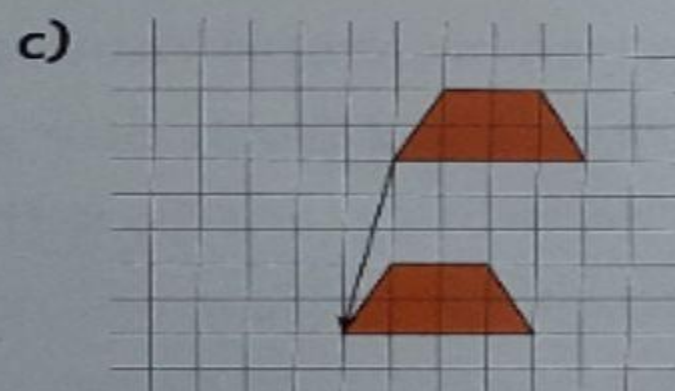
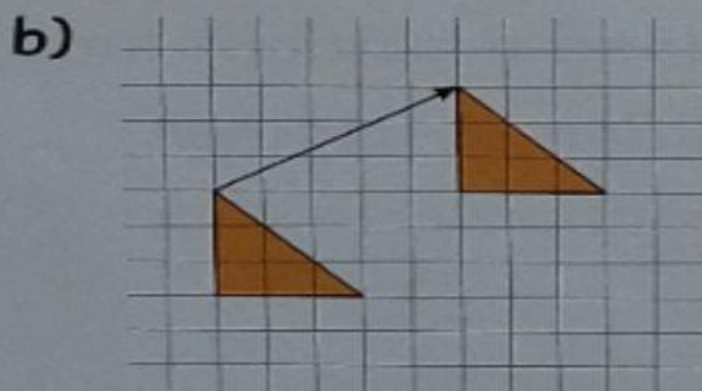
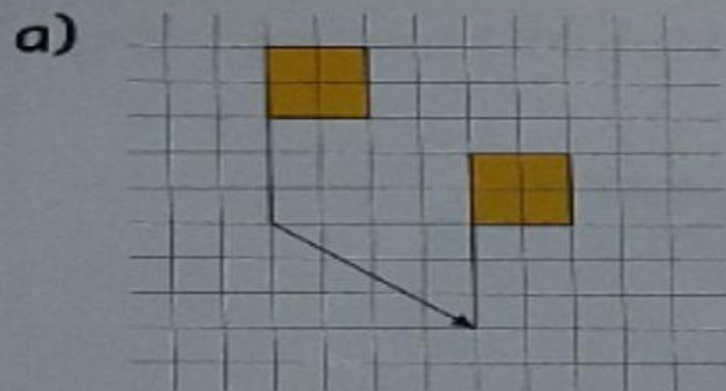
b) 5 squares right  
and 4 squares down



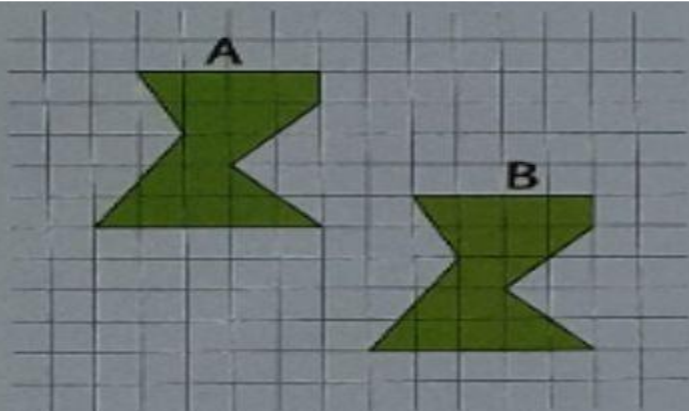
c) 3 squares left  
and 6 squares down



Write the translation that moved each shape to its image.



Draw a grid (positive numbers).

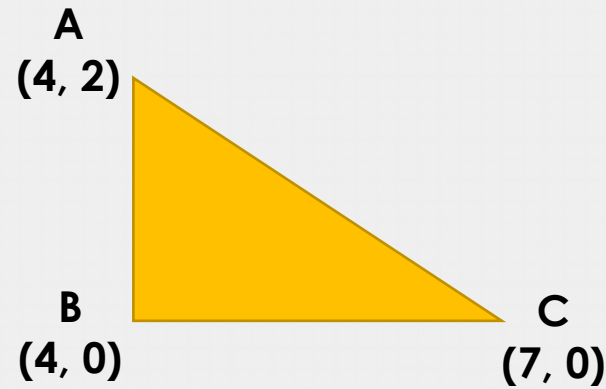


a) Describe which translation moves shape A to shape B.

b) Describe which translation moves shape B to shape A.

## Reasoning 1

**Ella and Sam are translating this shape 2 units left and 6 units up.**



**Ella thinks the translated coordinates of vertex A will be  $(2, 8)$ .  
Sam thinks the translated coordinates of vertex C will be  $(6, 5)$ .**

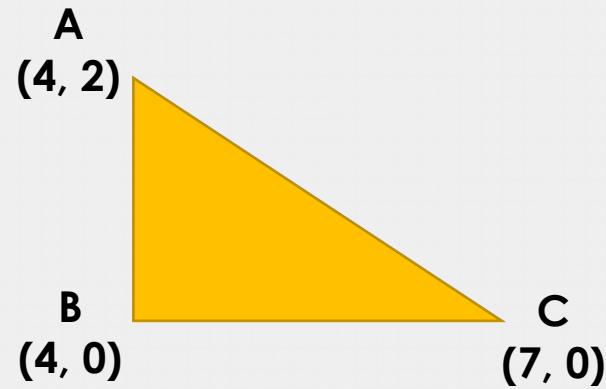
**Who is correct? Explain how you know.**

**Ella is correct because...**

**Sam is incorrect because...**

### Reasoning 1

Ella and Sam are translating this shape 2 units left and 6 units up.



Ella thinks the translated coordinates of vertex A will be (2, 8).  
Sam thinks the translated coordinates of vertex C will be (6, 5).

Who is correct? Explain how you know.

**Ella is correct because vertex A moves 2 units left (-2) and 6 units up (+6). The new coordinates are (2, 8).**

**Sam is incorrect because vertex C moves 2 units left (-2) and 6 units up (+6). The new coordinates are (5, 6).**