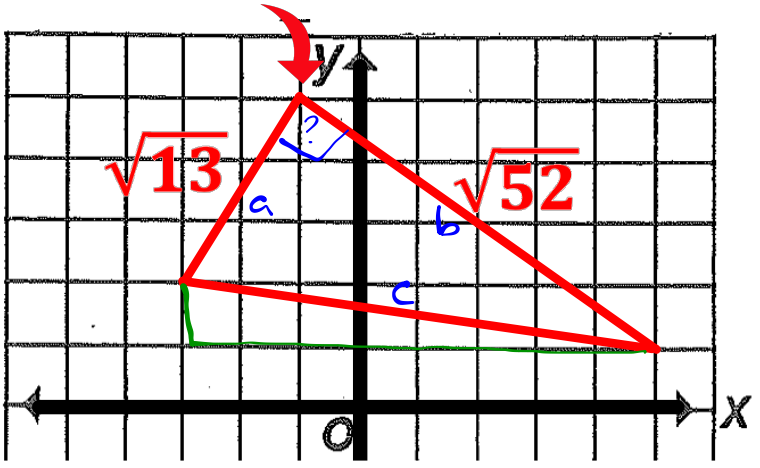
Warm Up

Is this a right angle?



$a^2+b^2=c^2$

$(\sqrt{13})^2+(\sqrt{52})^2=c^2$

$13+52=c^2$

$65=c^2$

$\sqrt{65}=c$

Length of "c" is $\sqrt{65}$ if it is a right triangle

What is the actual length of c?

$a^2+b^2=c^2$

$1^2+8^2=c^2$

$1+64=c^2$

$65=c^2$

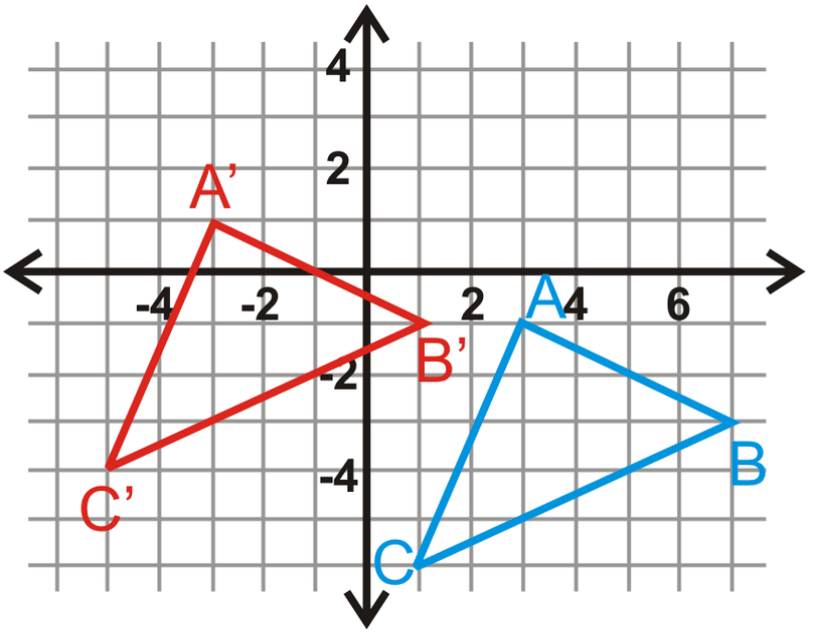
$\sqrt{65}=c$

Because this is equal to the length we would expect for a right triangle, the triangle as drawn is "right."

Transformations

Transformations move or change a figure.

What do we call the figures we transform?

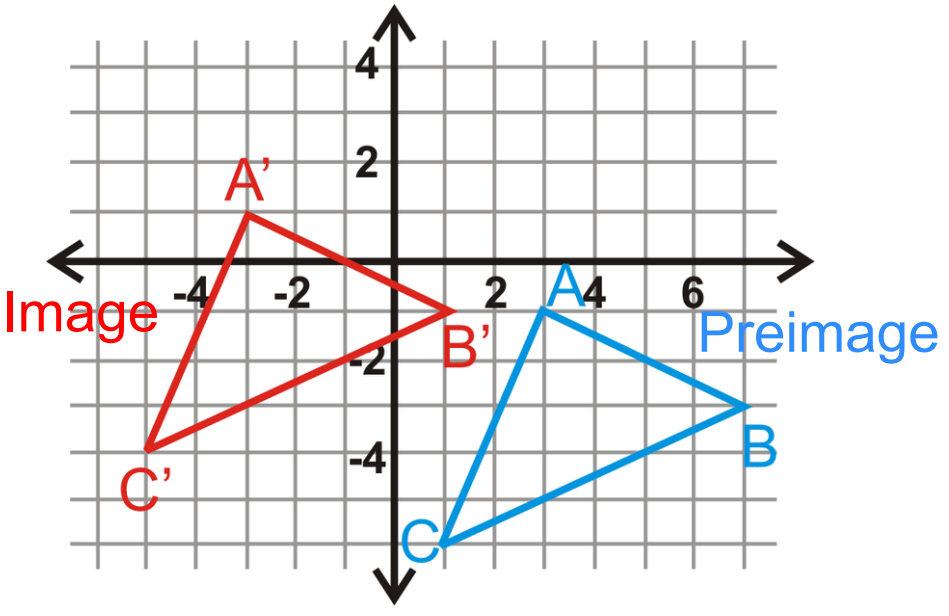


- The **original** figure is called the Pre Image
- The **transformed** figure is called the Image

- Every point in the Preimage follows the same rule

  to get to the Image.

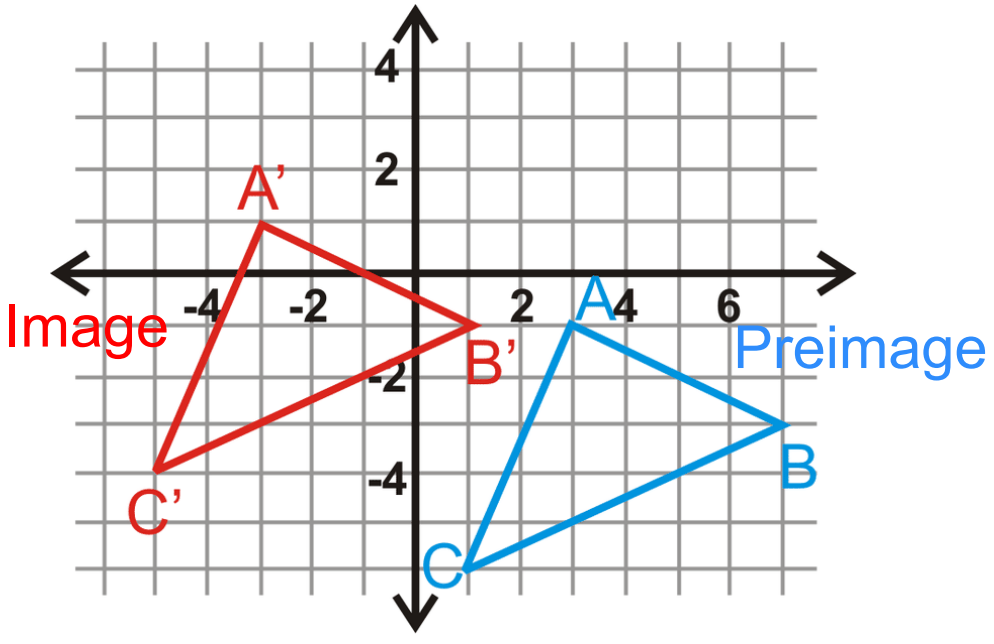
Preimage —Rule→ Image



- Point A of the Preimage is transformed to Point A',

  we call this point A ___prime___. A' ← prime

Δ ABC —Rule→ $\Delta A'B'C'$



- If Point A' is transformed again, the new point is Point A'',

  we call this point A ___double prime___.

We will also be talking about if figures are congruent or similar.

A figure is...

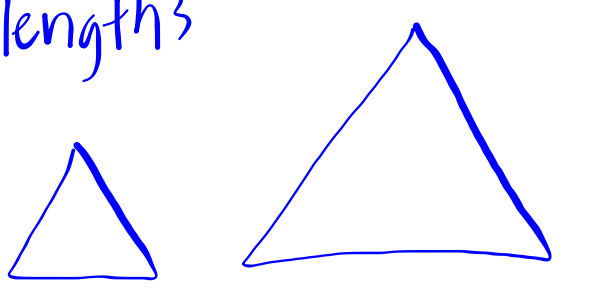
Congruent: Same size, lengths, area and angle measures

same "everything"

shape, angle measures, lengths

Similar: Different size, lengths and area changed by a factor, angle measures the same.

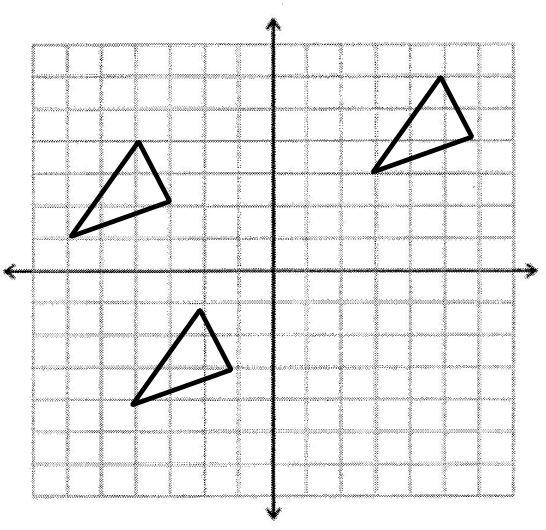
- same shape
- same angle measures
- different lengths



similar triangles

Translation

- A transformation that moves the image along a straight line.



Often called a

Slide

Rules for Translations:

Every point of the shape moves:

The same distance

In the same direction

Soooooo.....

The Image must be **congruent.**

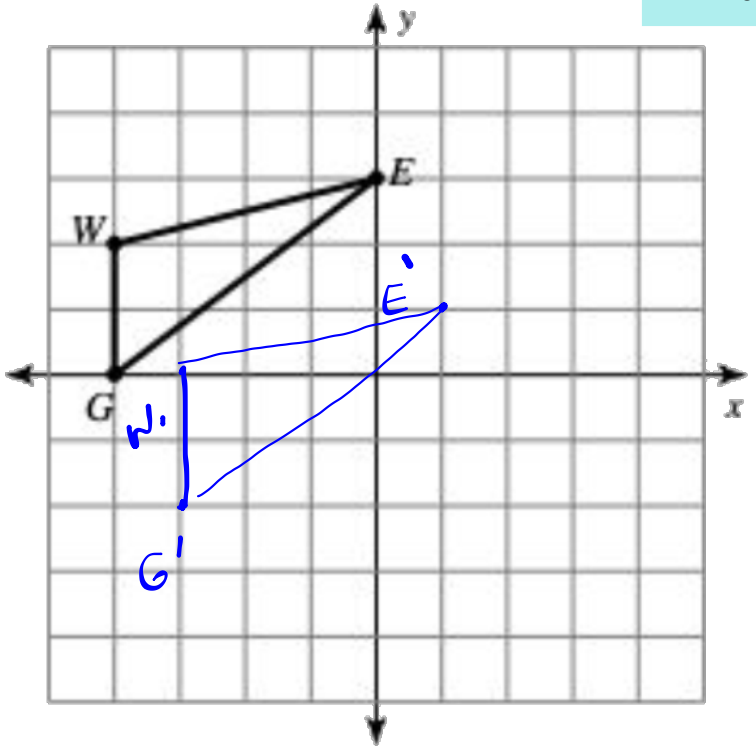
Example #1

Translation

Translate triangle WEG

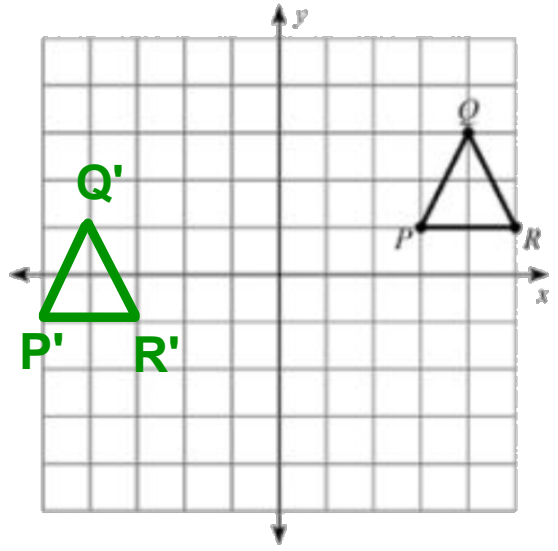
1 unit right and 2 units down

Slide



Example #2

Translation



Preimage

Image

$(x, y) \rightarrow (x - 8, y - 2)$

Slide

The **rule** describes how you will move each point of the figure.

Positive values translate a figure

up or to the right.

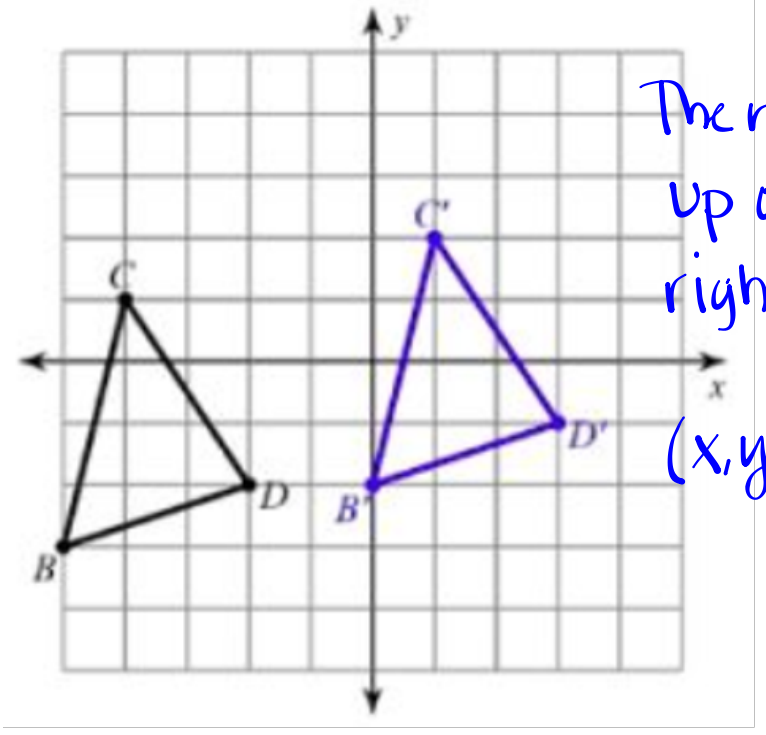
Negative values

translate a figure down or to the

left.

Example #3

Write the translation that must have occurred.



The rule in words:

Up one

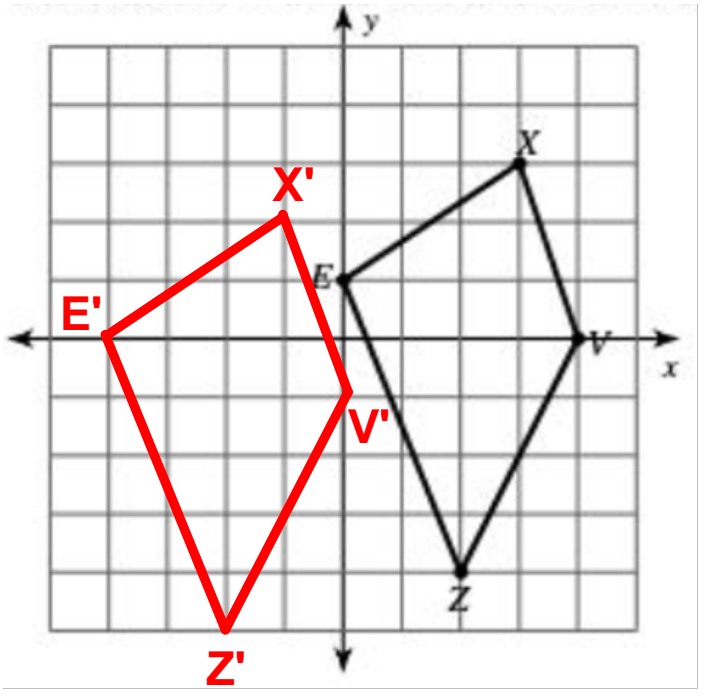
right 5

$(x,y) \rightarrow (x+5, y+1)$

Example #4

Perform the translation and write the rule in arrow notation.

Translate 4 units left and 1 unit down.



Translations