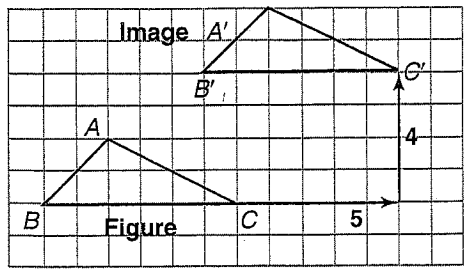
Name _____ Class _____ Date _____

Reteaching 3-6

Translations

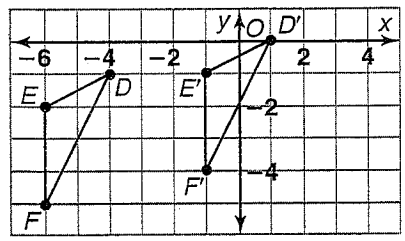
A *translation* moves every point of a figure the same distance in the same direction.

Triangle ABC is translated 5 units to the right and 4 units up. The *image* of $\triangle ABC$ is $\triangle A'B'C'$.



You can write a rule to describe a translation in the coordinate plane.

To get the translation of $\triangle DEF$, you have to add 5 to each x-coordinate and add 1 to each y-coordinate.



$D(-4, -1) \rightarrow D'(1, 0)$

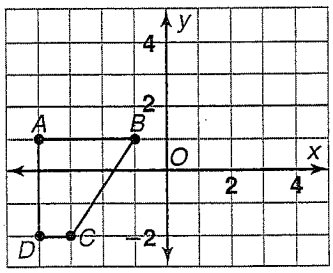
$E(-6, -2) \rightarrow E'(-1, -1)$

$F(-6, -5) \rightarrow F'(-1, -4)$

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

Copy each figure. Then graph the image after the given translation. Name the coordinates of the image.

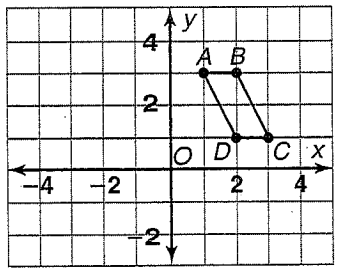
1. right 5 units, up 1 unit



_____

_____

2. left 3 units, down 2 units

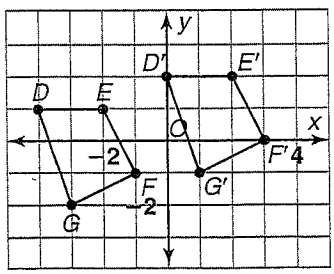


_____

_____

Use arrow notation to write a rule that describes the translation shown on each graph.

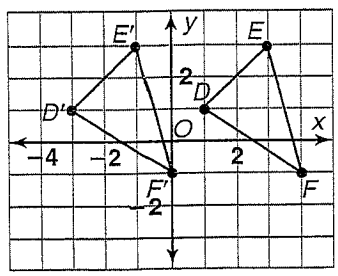
3.



_____

_____

4.



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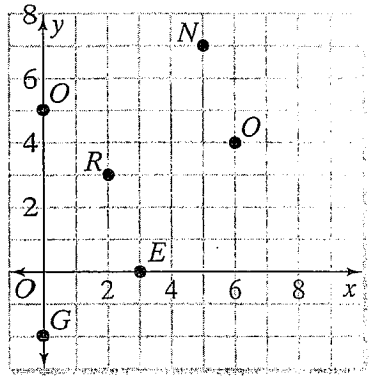
Name _____ Class _____ Date _____

Puzzle 3-6

Translations

Read the description of each figure. Then find the missing point on the graph.



1. I am a triangle with vertices at points (3, 2), (6, 3), and (5, 5). I am translated so that two of my vertices are now at (3, 4) and (6, 5). Where is my third vertex?

_____

2. I am a square with corners at (7, 1), (9, 3), (7, 5), and (5, 3). I have been translated so that three of my corners rest on (2, 3), (4, 5), and (2, 7). Where is my fourth corner located?

_____

3. I am a parallelogram with corners at points (6, 2), (6, 6), (4, 7), and (4,3). Three of my translated points are at (3, 4), (1, 5), and (1, 1). Where is my fourth point located?

_____

4. I am a rectangle with corners on points (3, 3), (6, 6), (4, 8), and (1, 5). I have been translated to rest on points (4, 6), (1, 3), and (3, 1). Where can my fourth corner be found?

_____

5. I am a triangle that has been translated to rest on (−1, −1), (−1, 3), and (−2, 1). Before translation I was on (3, 1) and (3, 5). Where was my third vertex before I was translated?

_____

6. I am a rhombus that rests on (1, 2), (3, 4), (1, 6), and (−1, 4) after translation. If I was on (2, 0), (0, 2), and (−2, 0) before being translated, where did my fourth corner rest?

_____

Which state is the only one to carry two different designs on its flag—one on the front and one on the back?

2	5	3	6	4	1