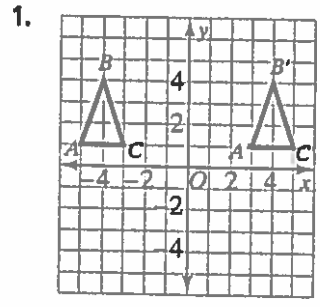
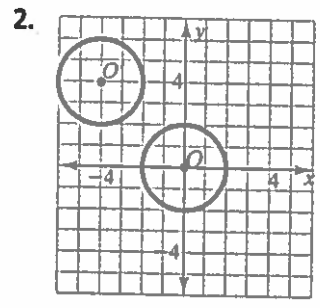


Practice 3-6

Translations

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

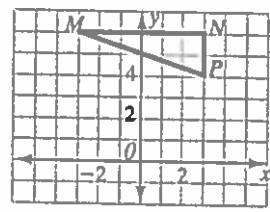




Copy $\triangle MNP$. Then graph the image after each translation. List the coordinates of each image's vertices.

3. left 2 units, down 2 units

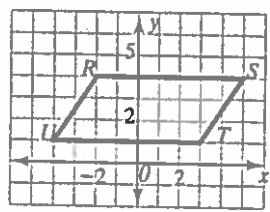
4. right 2 units, down 1 unit



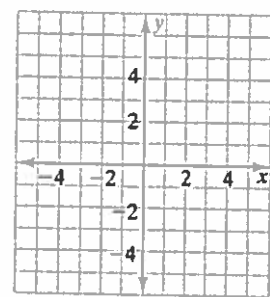
Copy $\square RSTU$. Then graph the image after each translation. List the coordinates of each image's vertices.

5. right 1 unit, down 2 units

6. left 3 units, up 0 units



7. A rectangle has its vertices at $M(1, 1)$, $N(6, 1)$, $O(6, 5)$, and $P(1, 5)$. The rectangle is translated to the left 4 units and down 3 units. What are the coordinates of M' , N' , O' , and P' ? Graph the rectangles $MNOP$ and $M'N'O'P'$.



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Puzzle 3-6

Translations

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

- 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?

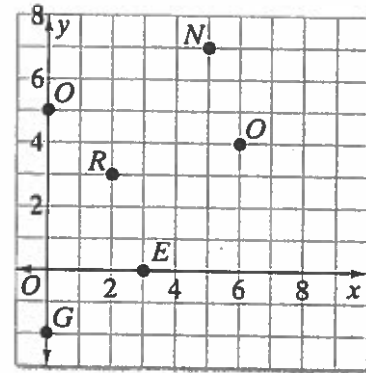
- I am a square with corners at $(7, 1)$, $(9, 3)$, $(7, 5)$, and $(5, 3)$. I have been translated so that three of my corners rest on $(2, 3)$, $(4, 5)$, and $(2, 7)$. Where is my fourth corner located?

- 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?

- 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?

- 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?

- 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?



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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