Name _____ Class _____ Date _____

9-1 • Guided Problem Solving

GPS Student Page 475, Exercise 26

Coordinate Geometry Parallelogram $ABCD$ has vertices $A(3, 6)$, $B(5, 5)$, $C(4, 2)$, and $D(2, 3)$. The figure is translated so that the image of point C is at the origin.

a. Find the rule that describes the translation.
b. Graph parallelogram $ABCD$ and its image.

Read and Understand

1. What information is given? _____

2. What are you asked to do? _____

Plan and Solve

3. What two points are the key to finding the translation rule? Give the coordinates for each. _____

4. The general form of a translation rule is $(x, y) \rightarrow (x + a, y + b)$. For the two points in Step 3, what is x? What is y? What are $x + a$ and $y + b$? _____

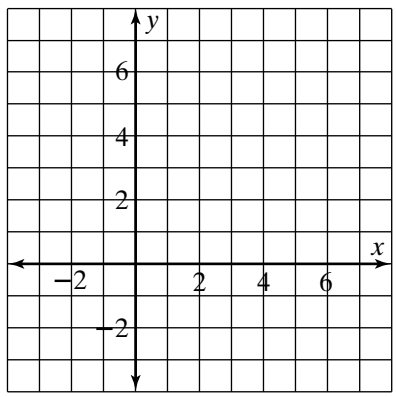
5. Find a and b, and write the translation rule. _____

6. Use the translation rule to find image points A', B', and D'.

_____

7. Graph $ABCD$ and $A'B'C'D'$ together.

_____



Look Back and Check

8. Since translation does not alter the size or shape of a figure, $ABCD$ and $A'B'C'D'$ should be congruent. Are they? _____

Solve Another Problem

9. Suppose that instead of being translated to the origin, point C had been translated to point $(5, -1)$. What would the translation rule have been? What would the coordinates of points A', B', and D' have been?

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