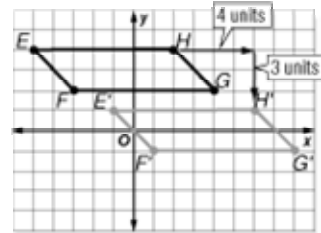


## Lesson 10-9

### Example 1 Graph a Translation

Translate parallelogram  $EFGH$  4 units right and 3 units down. Graph the translated figure.

- Move each vertex of the figure 4 units right and 3 units down. Label the new vertices  $E'$ ,  $F'$ ,  $G'$ , and  $H'$ .
- Connect the vertices to draw the parallelogram. The coordinates of the vertices of the new figure are  $E'(-1, 1)$ ,  $F'(1, -1)$ ,  $G'(8, -1)$ , and  $H'(6, 1)$ .



### Example 2 Find Coordinates of a Translation

Triangle  $RST$  has vertices  $R(-3, 4)$ ,  $S(1, -2)$ , and  $T(3, 2)$ . Find the vertices of triangle  $R'S'T'$  after a translation of 3 units left and 2 units up. Then graph the figure and its translated image.

Vertices of $\triangle RST$	$(x + (-3), y + 2)$	Vertices of $\triangle R'S'T'$
$R(-3, 4)$	$(-3 + (-3), 4 + 2)$	$R'(-6, 6)$
$S(1, -2)$	$(1 + (-3), -2 + 2)$	$S'(-2, 0)$
$T(3, 2)$	$(3 + (-3), 2 + 2)$	$T'(0, 4)$

The coordinates of the vertices of triangle  $R'S'T'$  are  $R'(-6, 6)$ ,  $S'(-2, 0)$ , and  $T'(0, 4)$ .

