Translations: Lesson 4 Translate by Hand

Student Activity

Name _____

Class _____

In this lesson, you will translate a triangle on a grid without technology. Open the document: *Translations_Lesson4.tns.*

It is important that one of the Translations Tours be done before any Translations lessons.

PLAY   INVESTIGATE   EXPLORE   DISCOVER

Move to page 1.2. (ctrl ▶) Read page 1.2.

On the handheld, press ctrl ▶ and ◀ to navigate through the pages of the lesson.
On the iPad®, select the page thumbnail in the page sorter panel.

1.   **Move to page 1.3.** (ctrl ▶) **Translate ΔABC up 2 units, right 6 units using a straightedge.**
   Read and follow the directions using the figure below.
   To check your answer or to get help, press the right arrow (▶) on the touchpad to advance a step and press the left arrow (◀) to go back a step, as needed.
   Label the vertices and show the three dashed segments that connect corresponding vertices.
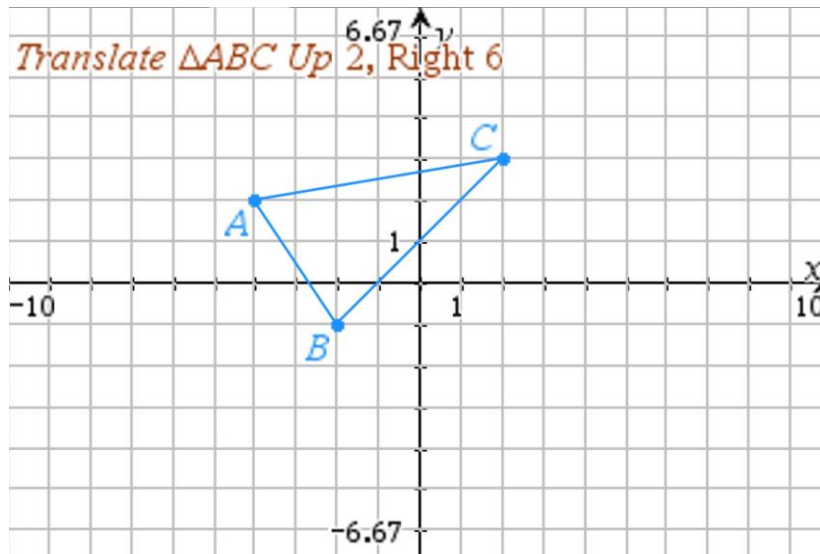
   List the coordinates of each of the six vertices:
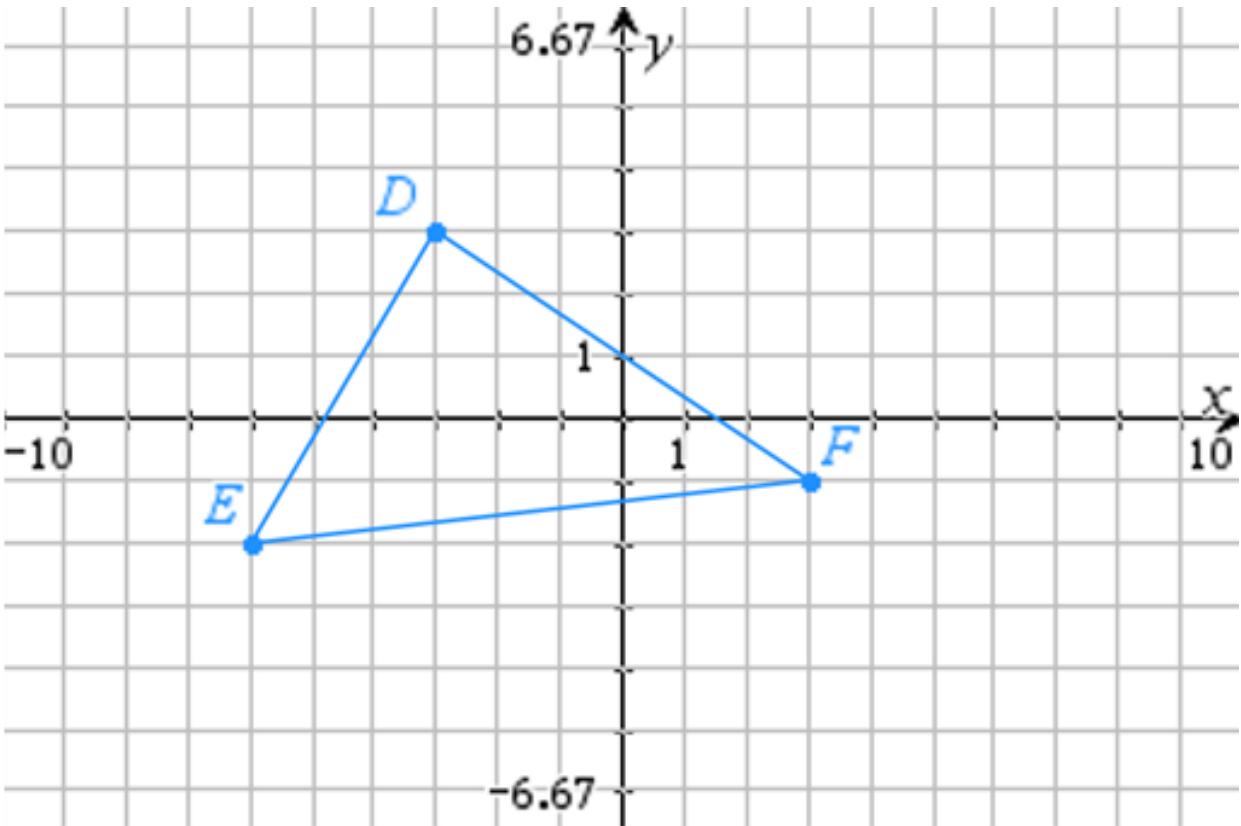
   A: _____   B: _____   C: _____

   A':_____   B':_____   C':_____
   If a point on ΔABC has coordinates (x, y), what will be the coordinates of its image on
   $\Delta A'B'C'$? _____

2. **Translate** ΔDEF **down 3 units, right 5 units using a straightedge.**

   Label the vertices and show the three dashed segments that connect corresponding vertices.

   List the coordinates of each of the six vertices:

   D: _____   E: _____   F: _____
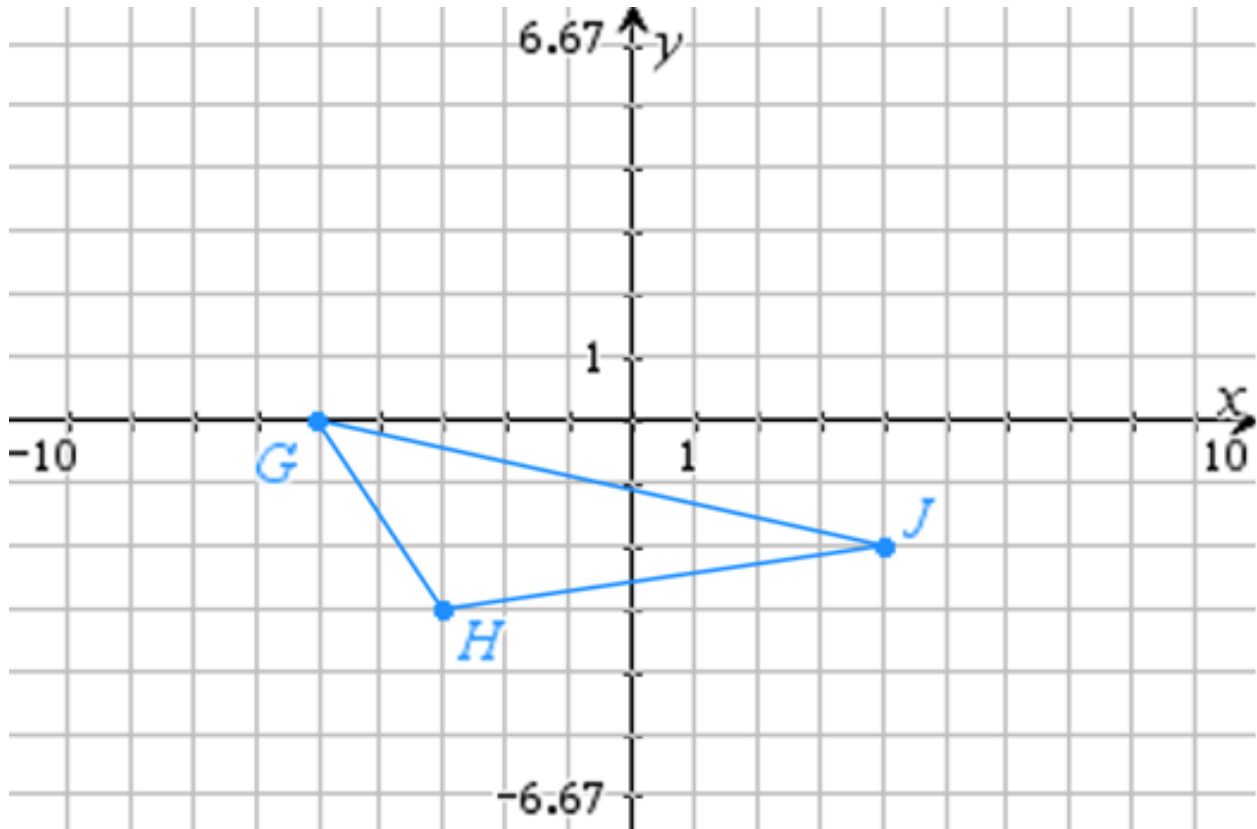
   D': _____   E': _____   F': _____

   If a point on ΔDEF has coordinates (x, y), what will be the coordinates of its image on

   $\Delta D'E'F'$? _____

   Using the expressions listed in your last answer above, check your answers for the coordinates
   of the six vertices. Make corrections as needed.

3. **Translate $\triangle GHJ$ up 4 units, left 2 units using a straightedge.**

   Label the vertices and show the three dashed segments that connect corresponding vertices.

   List the coordinates of each of the six vertices:

   G: _____   H: _____   J: _____
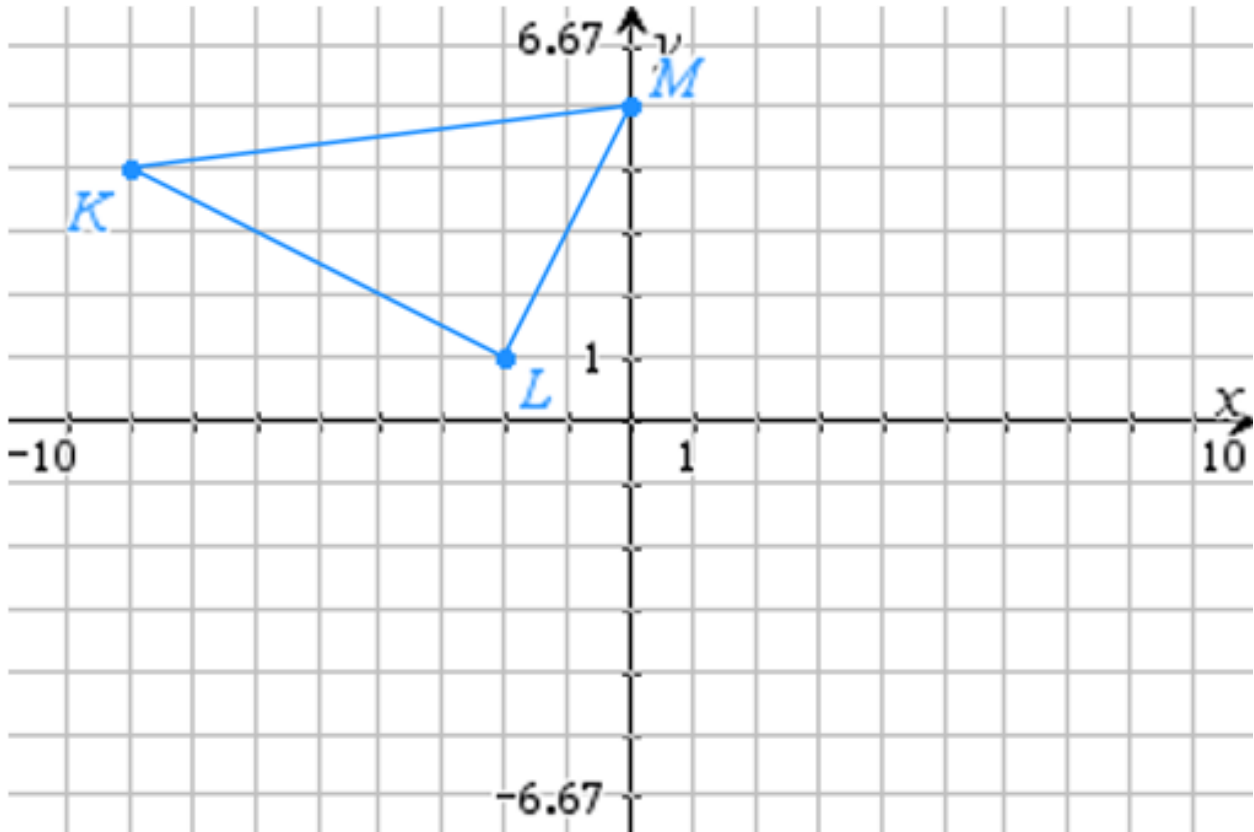
   G': _____   H': _____   J': _____

   If a point on $\triangle GHJ$ has coordinates (x, y), what will be the coordinates of its image on $\triangle G'H'J'$? _____

   Using the expressions listed in your last answer above, check your answers for the coordinates
   of the six vertices. Make corrections as needed.

4. **Translate** $\triangle KLM$ **down 5 units, right 1 unit using a straightedge.**

   Label the vertices and show the three dashed segments that connect corresponding vertices.

   List the coordinates of each of the six vertices:

   K: _____   L: _____   M: _____

   K': _____   L': _____   M': _____

   If a point on $\triangle KLM$ has coordinates (x, y), what will be the coordinates of its image on
   $\triangle K'L'M'$? _____
   Using the expressions listed in your last answer above, check your answers for the coordinates
   of the six vertices. Make corrections as needed.