

Lesson 3: Translating Lines

Classwork

Exercises

1. Draw a line passing through point P that is parallel to line L . Draw a second line passing through point P that is parallel to line L , that is distinct (i.e., different) from the first one. What do you notice?

P



2. Translate line L along the vector \overrightarrow{AB} . What do you notice about L and its image L' ?

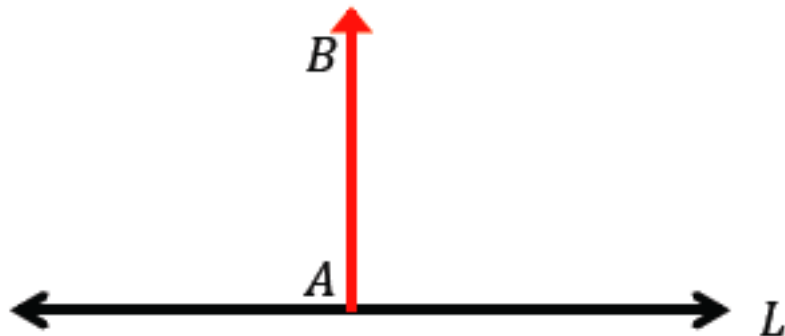


[Type here]

3. Line L is parallel to vector \overrightarrow{AB} . Translate line L along vector \overrightarrow{AB} . What do you notice about L and its image, L' ?

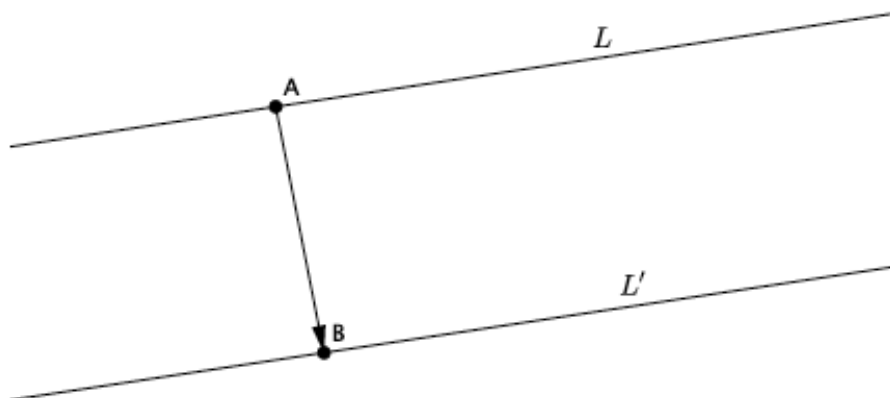


4. Translate line L along the vector \overrightarrow{AB} . What do you notice about L and its image, L' ?

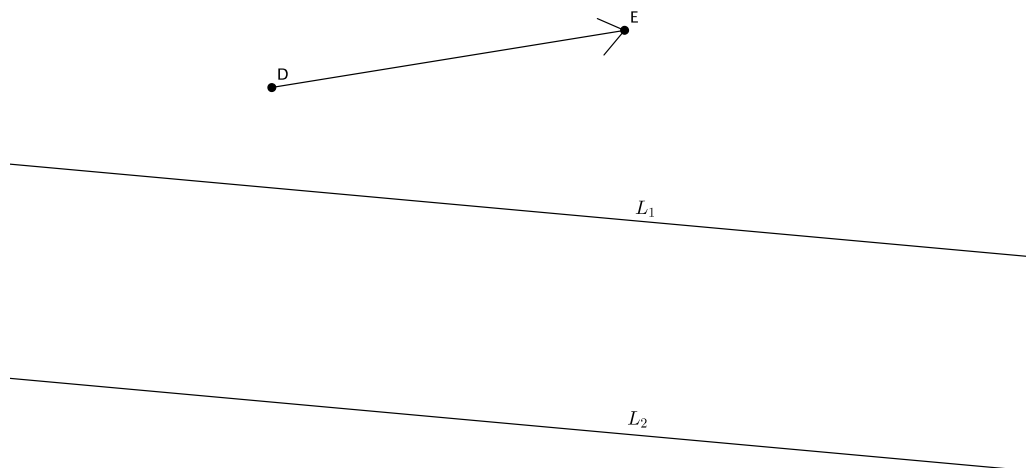


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5. Line L has been translated along vector \overrightarrow{AB} resulting in L' . What do you know about lines L and L' ?



6. Translate L_1 and L_2 along vector \overrightarrow{DE} . Label the images of the lines. If lines L_1 and L_2 are parallel, what do you know about their translated images?



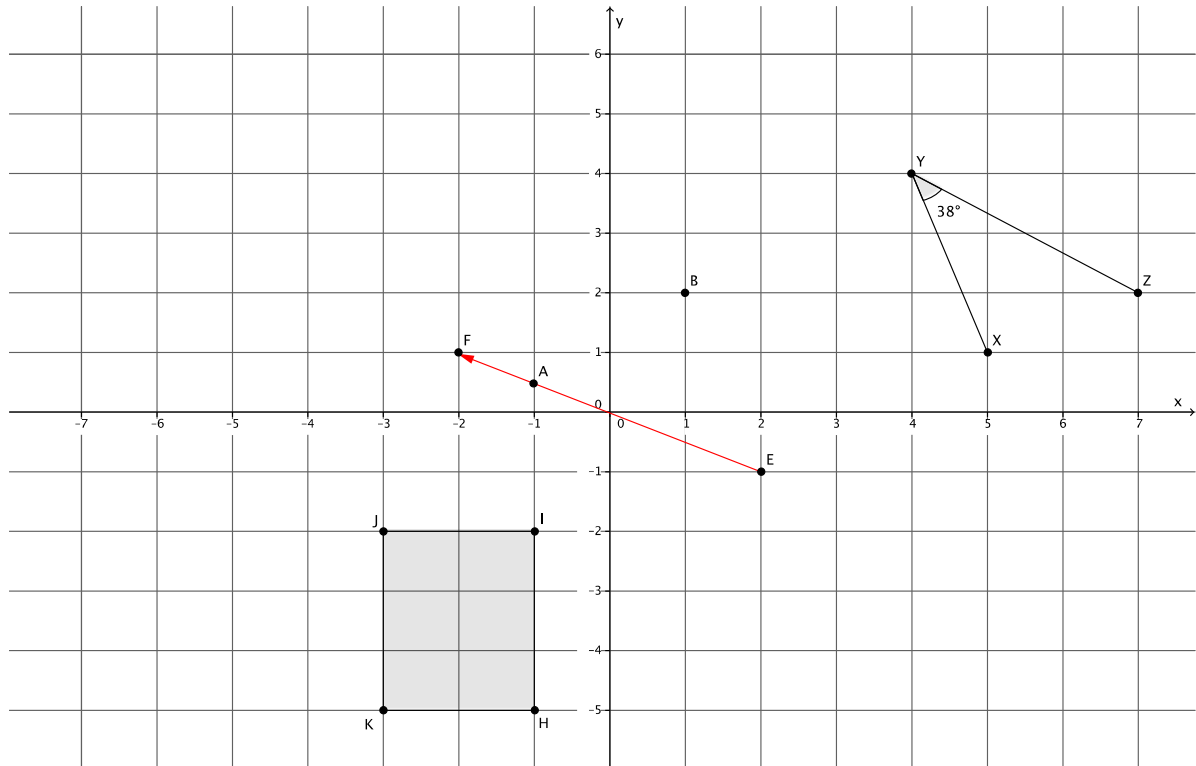
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Lesson Summary

- Two lines are said to be parallel if they do not intersect.
- Translations map parallel lines to parallel lines.
- Given a line L and a point P not lying on L , there is at most one line passing through P and parallel to L .

Problem Set

- Translate $\angle XYZ$, point A , point B , and rectangle $H I J K$ along vector \overrightarrow{EF} . Sketch the images and label all points using prime notation.



- What is the measure of the translated image of $\angle XYZ$. How do you know?
- Connect B to B' . What do you know about the line formed by BB' and the line containing the vector \overrightarrow{EF} ?
- Connect A to A' . What do you know about the line formed by AA' and the line containing the vector \overrightarrow{EF} ?

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5. Given that figure HJK is a rectangle, what do you know about lines HI and JK and their translated images? Explain.

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