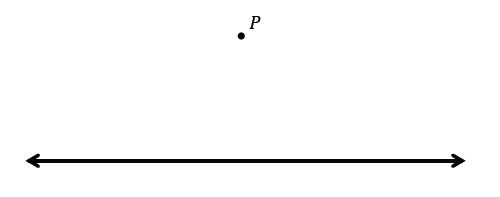
Lesson 3: Translating Lines

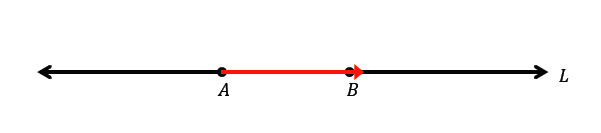
Classwork

Exercises

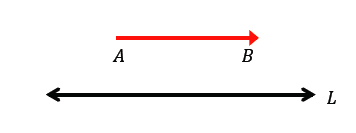
1. Draw a line passing through point *P* that is parallel to line . Draw a second line passing through point that is parallel to line , that is distinct (i.e., different) from the first one. What do you notice?



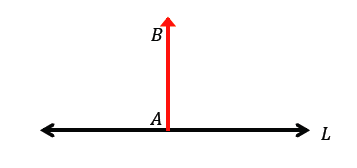
1. Translate line along the vector . What do you notice about and its image ?

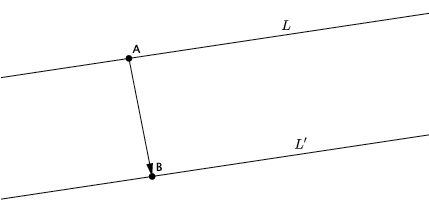


1. Line is parallel to vector . Translate line along vector . What do you notice about and its image, ?



1. Translate line along the vector . What do you notice about and its image, ?



1. Line has been translated along vector resulting in . What do you know about lines and ?
2. Translate and along vector . Label the images of the lines. If lines and 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 not lying on , there is at most one line passing through and parallel to .

Problem Set

1. Translate , point, point , and rectangle along vector Sketch the images and label all points using prime notation.

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1. What is the measure of the translated image of . How do you know?
2. Connect to . What do you know about the line formed by and the line containing the vector ?
3. Connect to . What do you know about the line formed by and the line containing the vector ?
4. Given that figure is a rectangle, what do you know about lines and and their translated images? Explain.