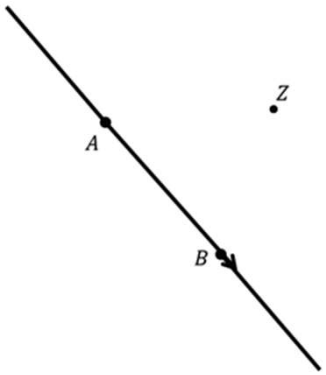
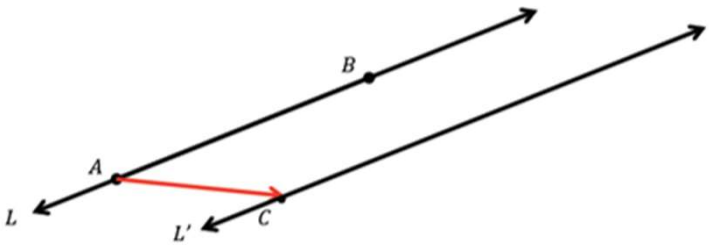
Translation Worksheets

1. Translate point Z along vector $\overrightarrow{AB}$. What do you know about the line containing vector $\overrightarrow{AB}$ and the line formed when you connect Z to its image Z'?



2. Using the above diagram, what do you know about the lengths of segment ZZ' and segment AB?

3. Let points A and B be on line L and the vector $\overrightarrow{AC}$ be given, as shown below. Translate line L along vector $\overrightarrow{AC}$. What do you know about line L and its image, L'? How many other lines can you draw through point C that have the same relationship as L and L'? How do you know?



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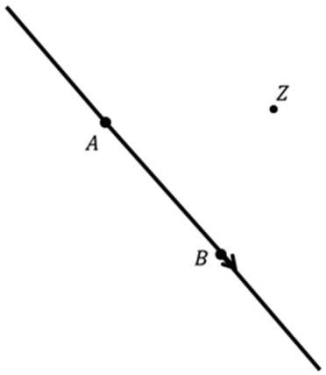
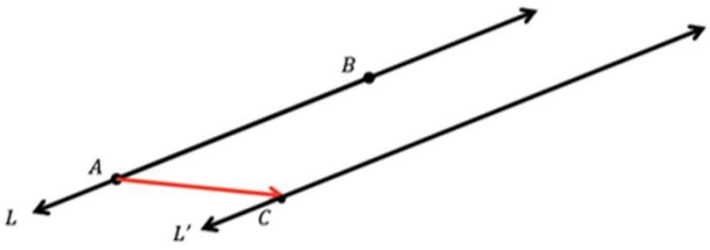


The line containing vector $\overrightarrow{AB}$ and ZZ' is parallel.

2. Using the above diagram, what do you know about the lengths of segment ZZ' and segment AB?

The lengths are equal: $|ZZ'| = |AB|$.

3. Let points A and B be on line L and the vector $\overrightarrow{AC}$ be given, as shown below. Translate line L along vector $\overrightarrow{AC}$. What do you know about line L and its image, L'? How many other lines can you draw through point C that have the same relationship as L and L'? How do you know?



L and L' are parallel. There is only one line parallel to line L that goes through point C. The fact that there is only one line through a point parallel to a given line guarantees it.

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