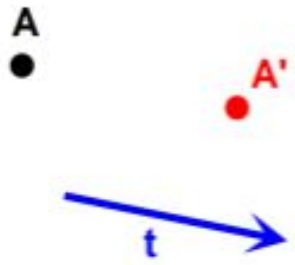
Translations

A **translation** is a geometric transformation that **slides** a point, a line, or a figure along a path in a certain **direction** and **length**.

All translations are defined by a **translation arrow**. This arrow indicates the length and direction of the translation.

For example, given the diagram below:



"A" is the original point

A' is the translated point

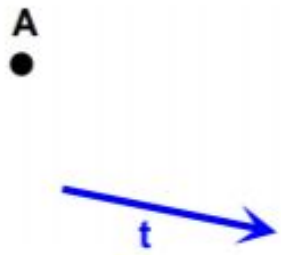
t is the translation arrow

A' is the **image** of A under the translation t.

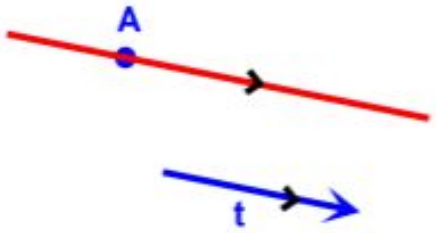
The path from A to A' is parallel to t, the same length as t, and the same direction as the arrow of t.

Example 1

Determine the position of point A under the given translation t.

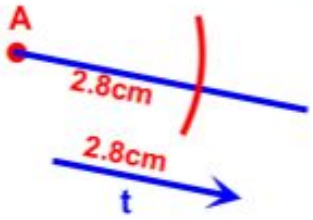


Draw a line that is parallel to the translation arrow t that passes through point **A** . Use a set square and a ruler.

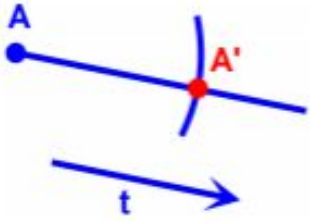


Example 1 - Continued

Use either a compass or a ruler to measure the length of the translation arrow t and mark this length on the new line from point **A**.

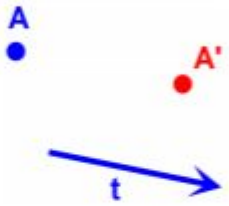


Write A′ at the place where the compass passed through the parallel line.



Example 1 - Continued

Remove the construction lines:



Point A′ is the position of point A under the given translation.

The above example demonstrated how to translate a single point, the same procedure is used to translate a line or a figure.