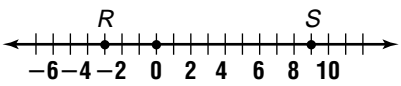
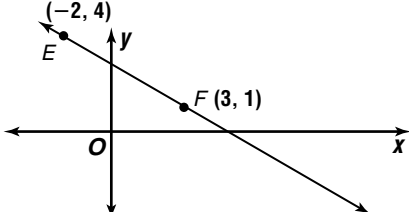


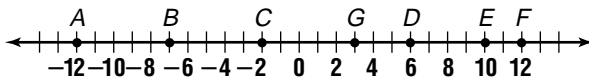
## Study Guide

**Midpoints and Segment Congruence**

There are two situations in which you may need to find the midpoint of a segment.

Midpoint on a Number Line	Midpoint in the Coordinate Plane
<p>The coordinate of the midpoint of a segment whose endpoints have coordinates <math>a</math> and <math>b</math> is <math>\frac{a+b}{2}</math>.</p> <p><b>Example:</b></p>  <p>The coordinate of the midpoint of <math>\overline{RS}</math> is <math>\frac{-3+9}{2}</math> or 3.</p>	<p>The coordinates of the midpoint of a segment whose endpoints have coordinates <math>(x_1, y_1)</math> and <math>(x_2, y_2)</math> are <math>\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)</math>.</p> <p><b>Example:</b></p>  <p>The coordinates of the midpoint of <math>\overline{EF}</math> are <math>\left(\frac{-2+3}{2}, \frac{4+1}{2}\right)</math> or <math>\left(\frac{1}{2}, \frac{5}{2}\right)</math>.</p>

Use the number line below to find the coordinates of the midpoint of each segment.



1.  $\overline{AB}$
2.  $\overline{BC}$
3.  $\overline{CE}$
4.  $\overline{DE}$
5.  $\overline{AE}$
6.  $\overline{FC}$
7.  $\overline{GE}$
8.  $\overline{BF}$

Refer to the coordinate plane at the right to find the coordinates of the midpoint of each segment.

9.  $\overline{JK}$
10.  $\overline{KL}$
11.  $\overline{LM}$
12.  $\overline{MN}$
13.  $\overline{NT}$
14.  $\overline{MT}$

