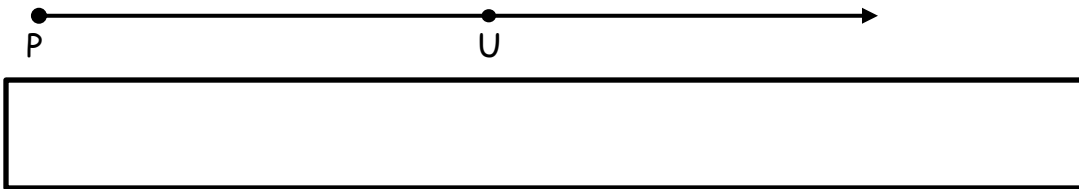


## Copying a segment and perpendicular bisectors

**Constructing a ray:** The only tools used in geometric constructions are a compass, a straight edge (like the side of a notecard) and a pencil. A ruler **CANNOT** be used.

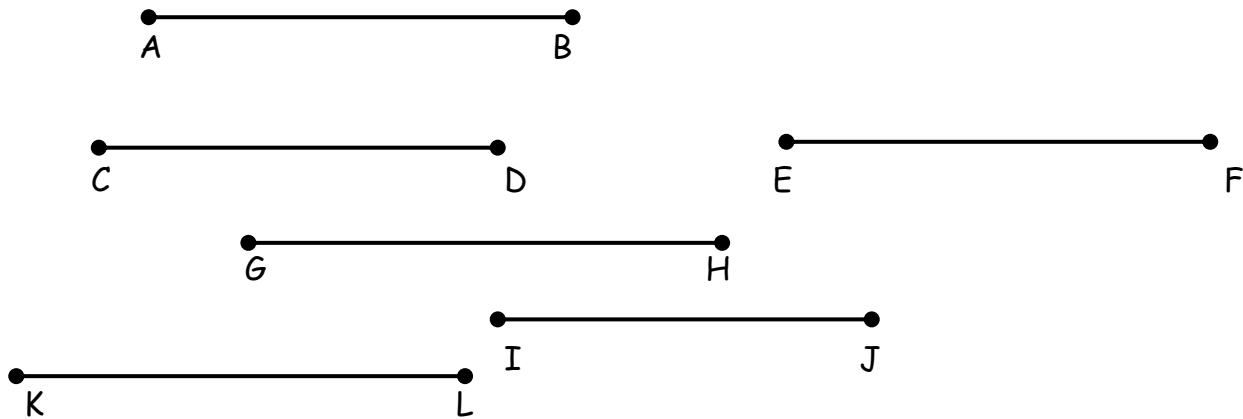
In the box, using only a compass and/or a straight edge, construct  $\overrightarrow{RS}$  congruent to  $\overrightarrow{PU}$ :



This is important because many constructions begin by constructing a ray.

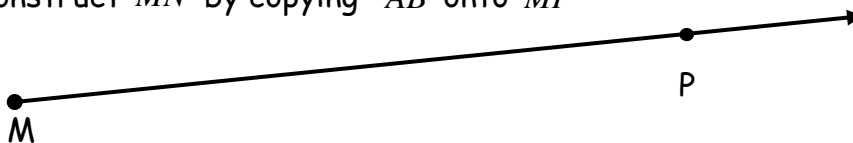
**Copying a segment:** When you copy a segment you construct a congruent segment.

1. a. Using **only your compass**, identify the segment that is congruent to  $\overline{AB}$ .

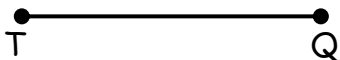


b. How do you know?

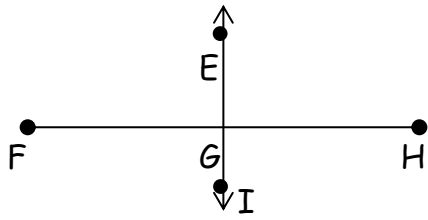
c. Construct  $\overline{MN}$  by copying  $\overline{AB}$  onto  $\overline{MP}$



2. In the box, construct  $\overline{RS}$  which is congruent to  $\overline{TQ}$  below.



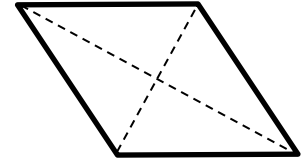
**Constructing a perpendicular bisector of a segment:**





$\overleftrightarrow{EI}$  is a perpendicular bisector of  $\overline{FH}$ .  
Mark the diagram to show this.

There are three properties of the diagonals of a rhombus.

- List them: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_



Instructions:	Construction:
<p>1. Construct two congruent intersecting circles (circle A and circle B) so that each passes through the other's center.</p> <p>Label the points of intersection C and D.</p> <p>Draw <math>\triangle ACB</math>.</p> <p>Draw quadrilateral ACBD.</p> <p>Draw the diagonal <math>\overline{CD}</math>.</p>	<p style="text-align: center;">  </p> <p>What type of triangle is <math>\triangle ACB</math>? _____</p> <p>What type of quadrilateral is ACBD? _____</p>
<p>2. Using what you saw in #1, construct a <b>perpendicular bisector</b> of <math>\overline{KM}</math>.</p> <p>Label the midpoint of <math>\overline{KM}</math>, point N.</p>	<p style="text-align: center;">  </p>