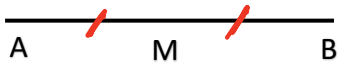
Proving Segments Hw Section 2.3

1. Prove the Midpoint Theorem.

Given M is the midpoint $\overline{AB}$
Prove $\overline{AM} \cong \overline{MB}$



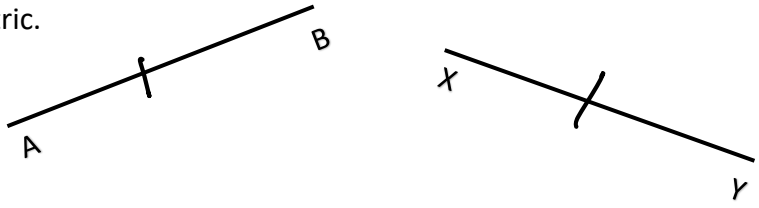
Statement	Reason
a. M is the MIDPOINT of $\overline{AB}$	a. GIVEN
b. $AM = MB$	b. Def'n of MIDPOINT
c. $\overline{AM} \cong \overline{MB}$	c. Def'n of $\cong$ Seg'ts
d.	d.

2. Prove congruence of segments is reflexive.
Given $\overline{AB}$ is a line segment
Prove $\overline{AB} \cong \overline{AB}$



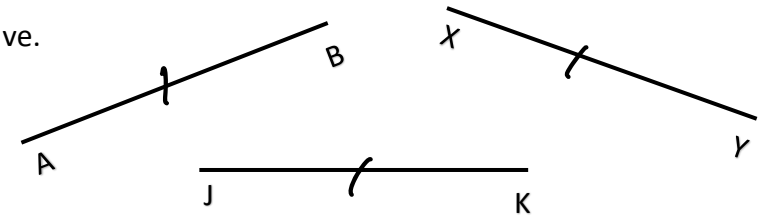
Statement	Reason
a. $\overline{AB}$ is a line segment	a. GIVEN
b. $AB = AB$	b. Reflexive PoE for $\mathbb{R}$
c. $\overline{AB} \cong \overline{AB}$	c. Def'n of $\cong$ segments
d.	d.
e.	e.

3. Prove congruence of segments is symmetric.
   Given $\overline{AB} \cong \overline{XY}$
   Prove $\overline{XY} \cong \overline{AB}$



Statement	Reason
a. $\overline{AB} \cong \overline{XY}$	a. GIVEN
b. $AB = XY$	b. Def'n of Congruent Segments
c. $XY = AB$	c. Symmetric PoE for $\mathbb{R}$
d. $\overline{XY} \cong \overline{AB}$	d. Def'n of Congruent Segments
e.	e.

4. Prove congruence of segments is transitive.
   Given $\overline{AB} \cong \overline{XY}, \overline{XY} \cong \overline{JK}$
   Prove $\overline{AB} \cong \overline{JK}$



Statement	Reason
a. $\overline{AB} \cong \overline{XY}$, $\overline{XY} \cong \overline{JK}$	a. GIVEN
b. $AB = XY$ $XY = JK$	b. Def'n of Congruent Segments
c. $AB = JK$	c. Transitive PoE for $\mathbb{R}$
d. $\overline{AB} \cong \overline{JK}$	d. Def'n of Congruent Segments
e.	e.