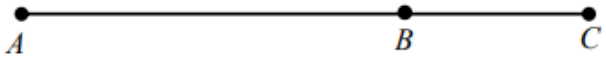
SEGMENTS PROOFS REFERENCE

Properties of Equality	
Addition Property Subtraction Property Multiplication Property Division Property Distributive Property	Substitution Property Reflexive Property Symmetric Property Transitive Property
The properties above may only be used with EQUAL signs. The following properties of congruence can be applied to statements with congruence symbols:	

Properties of Congruence	
Reflexive Property of Congruence	For any segment AB, _____.
Symmetric Property of Congruence	If _____, then _____.
Transitive Property of Congruence	If _____ and _____, then _____.

Definitions	
Definition of Congruence	Segments are congruent if and only if they have the same measure. If _____, then _____. If _____, then _____.
Definition of Midpoint	A point is a midpoint of a segment if and only if it is collinear with the segment's endpoints and it divides the segment into two congruent segments. If M is the midpoint of $\overline{AB}$, then _____. If M is on $\overline{AB}$ and $\overline{AM} \cong \overline{MB}$, then _____.

Postulates	
Segment Addition Postulate	If A, B, and C are collinear points and B is between A and C:  then: _____

Practice!

Justify each of the following statements using a property of equality, property of congruence, definition, or postulate.

1. If $PQ = PQ$, then $\overline{PQ} \cong \overline{PQ}$ _____

2. If K is between J and L, then $JK + KL = JL$ _____

3. $\overline{EF} \cong \overline{EF}$ _____

4. If $RS = TU$, then $RS + XY = TU + XY$ _____

5. If $AB = DE$, then $DE = AB$ _____

6. If Y is the midpoint of $\overline{XZ}$, then $XY = YZ$ _____

7. If $\overline{FG} \cong \overline{HI}$ and $\overline{HI} \cong \overline{JK}$, then $\overline{FG} \cong \overline{JK}$ _____

8. If $AB + CD = EF + CD$, then $AB = EF$ _____

9. If $PQ + RS = TV$ and $RS = WX$, then $PQ + WX = TV$ _____

10. If $LP = PN$, and L, P, and N are collinear, then P is the midpoint of $\overline{LN}$ _____

11. If $\overline{UV} \cong \overline{UV}$, then $UV = UV$ _____

12. If $CD + DE = CE$, then $CD = CE - DE$ _____

Property Bank:

Properties of Equality:

Addition Property
Subtraction Property
Multiplication Property
Division Property
Distributive Property
Substitution Property
Reflexive Property
Symmetric Property
Transitive Property

Properties of Congruence:

Reflexive Property
Symmetric Property
Transitive Property

Definitions:

Definition of Congruence
Definition of Midpoint

Postulates:

Segment Addition Postulate