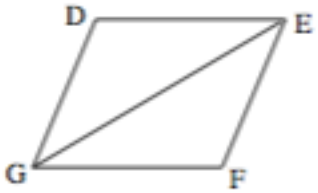
Segment/Angle Proofs – Geometry Section 2.7 Name:_____

A. Start – WHAT ARE WE GIVEN??? – Write this Down FIRST!

B. End- Yes, look at this SECOND- where do we need to end up?

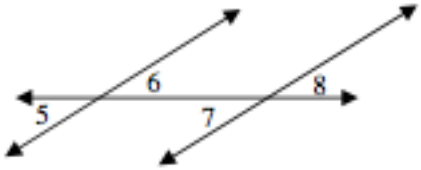
C. Middle- Make a PLAN to get from the start to the end
   a. What vocab are we given? Anything from the diagram?? – WRITE THESE DOWN! ☺
   b. Can we rewrite any of our segments or angles as an equation that would be helpful?
   c. Will the transitive property or substitution property be helpful?
   d. Do we need to switch between congruence and equality?

GIVEN: DG = 11
GF = 11
$\overline{GF} \cong \overline{EF}$
PROVE: $\overline{DG} \cong \overline{EF}$



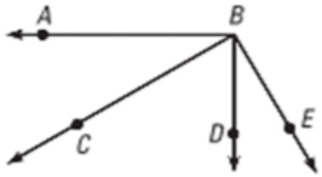
STATEMENTS	**REASON**
1._____	1._____
2. DG = GF	2._____
3. _____	3. Definition of Congruent Segments
4._____	4._____

GIVEN: ∠6 ≅ ∠7
PROVE: ∠5 ≅ ∠8



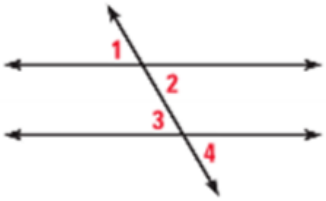
STATEMENTS	**REASON**
1._____	1._____
2. ∠6 ≅ ∠5	2._____
3. _____	3. Vertical Angles Theorem
4._____	4. Transitive Property of Congruence
5. _____	5._____

GIVEN: $\angle ABD$ *is a right angle*
$\angle CBE$ *is a right angle*
PROVE: $\angle ABC \cong \angle DBE$



STATEMENTS	**REASON**
1. _____	1. _____
2. $m\angle ABD = 90°, m\angle CBE = 90°$	2. _____
3. $m\angle ABC + m\angle CBD = m\angle ABD$ $m\angle DBE + m\angle CBD = m\angle CBE$	3. _____
4. _____	4. Substitution Property of Equality.
5. $m\angle ABC + mCBD = m\angle DBE + mCBD$	5. _____
6. _____	6. Subtraction Property of Equality
7. $\angle ABC \cong \angle DBE$	7. _____

GIVEN: $\angle 2 \cong \angle 3$
PROVE: $\angle 1 \cong \angle 4$



**BEFORE YOU START WRITING- Look at the information you are given AND the picture. What do you already know? How can you use this information to PROVE the final statement? Once you have a plan- start with writing everything you originally knew…then follow through with your plan…

STATEMENTS	**REASON**

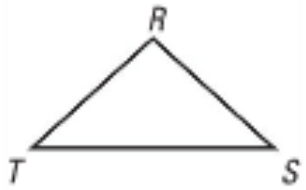
GIVEN: $2AB = AC$
PROVE: $AB = BC$

STATEMENTS	**REASON**

GIVEN: $m\angle 1 + m\angle 2 = 180°$
$m\angle 1 = 62°$
PROVE: $m\angle 2 = 118°$

STATEMENTS	**REASON**

GIVEN: $RT = 5$
$RS = 5$
$\overline{RT} \cong \overline{TS}$
PROVE: $\overline{RS} \cong \overline{TS}$



STATEMENTS	**REASON**