Geometry Week 11 Assignment:

Day 1: pp. 204-205 #1-29
Day 2: Chapter 5 test
Day 3: pp. 212-214 #1-17, 19-21
Day 4: pp. 218-220 #1-10 all, 11-19 odd
Day 5: pp. 223-224 #1-18, 21-25

Notes on Assignment:

Pages 204-205

Work to show:

All problems: Answer as directed.

Chapter Review – no notes

Chapter 5 test

For the test you must:

- Know the symbols (fill in the blank)
- Match terms with definitions
- Write negations and conditional statements
- Analyze statements (true, false, not a statement)
- Analyze arguments (valid, invalid, sound, unsound)
- Make truth tables
- Identify fallacies (matching)
- Identify the type of reasoning in a deductive argument (fill in the blank)

Pages 212-214

Work to show:

#1-17: Answers only
#19-21: Proofs

#1-17: Use your theorem and definition sheets for quick reference.

#2: This is a definition.

#3: Look at steps 1 and 2 together.

#5: Look at steps 3 and 4 together.

#7-9: These are all Incidence Postulates.

#10: When you restate the If-then statement that you are proving, the reason is the Law of Deduction.

#12: If you look at #11, you will see that what happened in #12 was that you added the 2 equations together from #11. When you do this, it is using the Addition Property of Equality (remember that!)

#14: Look at #12 and 13 together.

#19: Set up your "T" as follows:

Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.

Every step must have a reason. Start with what you are given, and state the reason as "Given." Also, you may want to mark the 2 equal segments with a small hash mark showing that they are equal. This example has 4 steps, but your proof may have more (or less) steps.

Problem #19 is very similar to the one that we did in class with angles. (Refer to the overhead masters if needed.) Here's a hint. For step 2 write MP = MP with the reason being "Reflexive." Then add the equations from step 1 and step 2 together.

#20: What you are proving here is that segment congruence is transitive. We already know that equality is transitive (Transitive Property of Equality). Can you change the segment congruence to measurement equality, show that transitive works, and then change the equality back to congruence?

#21: What you are proving here is that segment congruence is symmetric. We already know that equality is symmetric (Symmetric Property of Equality). Use the same type of logic used for #20.

<u>Pages 218-220</u>

Work to show:

#1-6: Answers only
#7: Proof
#8: Answer
#9-19: Proofs

#2: Whenever you go from congruence of figures to equality of measurements (or vice versa) what allows us to do that is the definition of congruence.

#3: This is a theorem from chapter 4.

#5: Look at steps 2 and 4 together.

#7: First, think about what you know based on what's given. What does it mean to be supplementary? What does it mean to be congruent? Then think about what you are trying to prove and work your way backwards. What does it mean to be perpendicular? What does the definition say needs to be true? Can you prove that with what you know in your given? How?

#8: This is just like the one we did in class for supplementary angles. It is also listed in your book on page 215 as example 2. Use that as a model for proving this theorem.

#9: Write down all that you know based on what is given, using the midpoint definition. Then use the midpoint theorem as it applies to BE and EC. Do you see any substitutions that you can make?

#10: This is just like #20 in the last assignment, except it is for angle congruence instead of segment congruence. The proof will be almost identical.

#11: You will use the transitive property of congruent angles that you proved in #10 for this problem. You will also use the vertical angle theorem.

#13: This is a 2-step proof. State what you know to be true for angle measurements using the symmetric property of equality, and then show how that relates to angle congruence.

#15: This is similar to example 3 on page 217, except that instead of adding the same angle measure ($m\angle BXD$) to each of the 2 congruent smaller angle measures, you are adding the measurements of congruent angles ($\angle ABC$ and $m\angle PQR$).

#17: Start by drawing what is given. Draw 2 angles, $\angle ABC$ and $\angle DEF$. Draw the bisector ray BR and the bisector ray ES. (You can use any letters, but these will match what is in the solution.) This problem is very much like one we did in class using midpoints of segments (Theorem 6.1). Its proof is on page 210-211. Use this as a model for proving this theorem (Theorem 6.8).

<u>Pages 223-224</u>

Work to show:

All Problems: Answers only

#1-16: Be careful to list the vertices so that the congruent angles are in the same position in the listing.

#17: Start with the following given: $\Delta ABC \cong \Delta PQR$ and $\Delta PQR \cong \Delta XYZ$. State all of the relationships that you know in each pair of triangles. Then use the transitive property of congruent angles and the transitive property of congruent segments that you proved in the last assignments to show the “pieces” of ΔABC are congruent to the “pieces” of ΔXYZ.

#18: Do this the same as #17, except use the reflexive properties of congruent angles and congruent segments to show that the “pieces” of ΔABC are congruent to each other, and thus $\Delta ABC \cong \Delta ABC$.