Week 27 Geometry Assignment

Day 1: pp. 530-533 #1-29
Day 2: Chapter 12 test
Day 3: pp. 538-539 #1-16, 21-25, *[23-27]**
Day 4: pp. 545-547 #1-12 all, 13-19 odd
Day 5: pp. 552-553 #1-18

* Cummulative Review problem #'s adjusted for 3rd edition books

Notes on Assignment:

Pages 532-533:

Work to show:
- #1-8: Drawings
- #9: Answer as directed
- #10-27: Answer as directed
- #28-29: Proofs

#28: You will need to use the assumption in the directions. That is, you will need to use "Dilations preserve angle measure" in your proof. Start with what you know about the angle relations due to the dilation and the known bisection. Then use some substitutions to get what you need to fulfill the definition of angle bisector for ∠DEF.

#29: You will again need to use "Dilations preserve angle measure" in your proof. Work backwards from what you are trying to prove. What does the definition of perpendicular tell you that you need? What do you need to show (by definition) in order to show what you need for the definition of perpendicular? Can you get that from substituting known relationships? (Yes, you can. ☺)

Chapter 12 Test:

For the test:
- 25 true/false questions based on terms (Review the text sections of the chapter well, including definitions, theorems, and general concepts.)
- Draw reflections, rotations, and dilations
- Find line symmetries and describe the axes of symmetry
- Find point symmetries
- Find rotations symmetries and list the rotational symmetries (i.e. the angles of rotation)

Pages 538-539:

Work to show:

#1-6: Write the problem and solve the proportion
#7-8: Answers only
#9-12: Write the proportion and solve.
#12-16: Answer as directed.
CR: Answer as directed.

#1-6: Use cross products and simple algebra to solve these proportions.

#9-12: You need to set up a proportion to solve these. One of the ratios must have both numbers filled in. The other ratio will have one unknown in it.

Note: You can always simplify a ratio to lower terms to make the math easier. For example, look at the proportion:

$$\frac{27}{36} = \frac{7}{x}$$

You can simplify the left side and solve the simpler proportion:

$$\frac{3}{4} = \frac{7}{x}$$

#21*[23]:* Trace the 2 triangles shown underneath #22 and then find the center of the dilation.

#22*[24]:* Use a ruler and measure in mm. Remember to put the image amount over the preimage amount.

#25*[27]:* Trace the figure on your paper and then do the enlargement.

Pages 545-547:

Work to show:

#1-6: Show all ratios
#7-12: Answer as directed.
#13-19: Proofs

#1-6: You will have to check the ratios of all corresponding sides to see if they all reduce to the same fraction (ratio).

#7-12: You can only use AA, SSS, and SAS

#13: Use parallel lines cut by transversals to get AA similarity.

#15: You have 2 lines cut by a transversal. To show that the lines are parallel, you will need to show congruence in certain angles (see chapter 6 theorems and postulates).

#17: Given: $\Delta ABC \sim \Delta DEF$ Prove: $\Delta DEF \sim \Delta ABC$
This seems obvious, but be careful how you write the proof. From the given information we have $\angle A \cong \angle D$. You need that $\angle D \cong \angle A$. Can you state that?

#19: In exercise #18, it was proved (though not by you) that these 2 triangles are similar. You can use that in your proof if you want to. State "Exercise 18" as your reason.

Pages 552-553:

Work to show:
#1-15: Write the proportion and solve.
#16-18: Proofs

#1-5: Solve these proportions by using cross products. Put any binomials, such as x-1 in parentheses so that it appears as (x-1).

#5: Be careful in multiplying. You must use the Distributive Property to clear the parentheses. The result will be a quadratic equation. This problem can be easily solved by factoring. Get all terms on one side, factor, set each binomial factor equal to zero, and solve each equation. (Remember that we are to assume that x is positive from the directions.)

#6-15: All of these problems involve using geometric means, using either Theorem 13.5 or 13.6. Sometimes you will need to do some simple adding or subtracting of given amounts to find the quantity you need for your equation (proportion).

Note: Since distances must be positive, the " that we would usually include when we take the square root of both sides of an equation can be left off.

*Make sure to simplify any radicals!

#16-18: In these proofs, if you have the proportion listed and want to write the equation of cross products, the reason that you can use to justify it is the Multiplication Property of Equality.

#16: Solve using AA.

#17: What you are proving came from a proportion. Write the proportion that it came from and see what theorem that demonstrates.

#18: Write a list of the other proportions (and their resulting cross product equations) and see if you can do some substitution (or transitive).