Week 18 Geometry Assignment

Day 1: pp. 345-346 #1-17, 21-25 *[24-28]**
Day 2: pp 352-353 #1-17, 22-25
Day 3: pp. 357-358 #1-20, 25-29 *[29-33]**
Day 4: pp. 362-363 #1-27
Day 5: Chapter 8 test

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

Notes on Assignment:

Pages 345-346

Work to show:
#1-25: Show your work. Write down any formulas used.
CR: Definitions

#1: The lateral surface area is found using the formula L=pH, where p is the perimeter and H is the height.

#2: To find the surface area you need to find the lateral surface are and add the areas of the bases. The formula is S = L + 2B, where L is the lateral surface area and B is the area of the base. (Since there are 2 bases, we must double this amount.)

#3-8: You will need to use the appropriate formulas to find the area of the bases. For the regular polygon bases you will want to use the formula area = ½ ap.

#5: The apothem is not given, but you can find it, because a regular hexagon gives you equilateral triangles. The apothem of the hexagon is the height of one of those triangles. Refer to your formulas in chapter 7 regarding equilateral triangles, or just use the Pythagorean Theorem.

#9: Keep in mind that the bottom of the water tower will not need to be painted.

#12: Since the base is a square, the area must be s^2 and the perimeter, p, must be 4s. The surface area of L + 2B is then (4s)H + 2(s^2) and that amount should give us 224. Since the side is 1/3 the length of the height, you can say s = 1/3 H. Substitute that into your equation for s and then solve for H.

#14: Since the radius is 7 less than the height, we have r = H - 7. In the formula for surface area of a cylinder, replace the r's with H-7. Since the surface area is said to be 1248π, set your formula equal to that and solve for H. Then you can solve for r.

#17: Start with S= pH +2B (Thm. 8.14). Use the formulas that you know about the area and perimeter of squares to make some substitutions.

Pages 352-354:

Note: **There are a couple of discrepancies between the 2nd edition books and 3rd edition books for this section:**

#3: In the 2nd edition book, the slant height is 9, but in the 3rd edition book it is 15.
#7: In the 2nd edition book, the surface area is 152.8, but in the 3rd edition it is 152.4.
#12: In the 2nd edition book, the slant height is 4, but in the 3rd edition it is 6.

*The solutions packet will show answers for both editions.

#1-10: For the lateral surface area, use the formula L = ½p*l*, where p is the perimeter and *l* is the height of one of the triangular faces. For the surface area you need the formula S = L + B, where B is the area of the base. You can also us S = L + ½ap since the area of the base can be found by ½ ap.

#3: It will help you find the apothem if you realize that the base is a square.

#5: Notice that the base is a regular hexagon. It would be helpful to draw the hexagon, put in the apothem value, and use the right triangle that has the apothem as the height to find the length of the side. Because it is a regular hexagon, the shorter leg of the right triangle is ½ of the length of the hypotnenuse because the hypotenuse is the same length as the sides of the hexagon. So, use x and ½x in the Pythagorean theorem to find the length of the side of the hexagon.

#6: You know that the lateral area is 125, so L = ½ p*l* = 125. Substitute what you are given for *l* and solve for p.

#8: Use the theorems regarding equilateral triangles.

#9: Let n = the number of sides. Set up the lateral surface area formula, fill in what you can, and then solve for n.

#16: You will need to find the lateral surface area of the cone first. You don't have the slant height, but you can find it. Then see how many 60's you will need to get that number. If you need a fraction of a hide, count it as a full hide.

#17: Notice that the slant height of the cone is the same as the side of the square. Use the given information to find the slant height.

Pages 357-359:

Work to show:
#1-5: Show your work. Write down any formulas used.
#6-10: Fill in the chart, answers only.
#11-20: Show your work. Write down any formulas used.
CR: Answers only.

#1-5: Use the formula for the area of a sphere for these problems. $S = 4\pi r^2$.

#6-10: Refer to the pictures of the Platonic solids on page 356.

#11-15: Consider the shape of each face and the different formulas used to find the areas of these different shapes.

#18: Once you find the surface area, see how many 150's will go into that number to see how many cans of paint to buy.

#19: Start with the formula $S = 4\pi r^2$ and substitute in for r.

#20: Start with the formula S = nA and substitute for A.

#25-29 *[29-33]:* These are all from chapter 2 if you need to look back.

Pages 362-363:

Work to show:
#1-17: Draw the pictures and label with the given information. Show your work. Write down any formulas used.
#18-27: Show your work. Write down any formulas used.

Chapter review - no notes

Chapter 8 test

*You will be allowed to use one hand-written 3x5 index card for this test. You should write any formulas that you think you will need on this card, as well as any other information you have room for.

Notes on the test:

- The test is almost entirely figuring out areas, volumes, and missing information in figures using area or volume.