Week 7 Pre-Algebra Assignment:

Day 1: pp. 113-115 #1-10 (5 steps)
Day 2: pp. 113-115 #11-20 (5 steps)
Day 3: pp. 113-115 #21-30 (5 steps)
Day 4: pp. 118-119 #1-8, 9-29 odd, 42-51
Day 5: pp. 124-125 #1-27 odd, 37-44

Notes on Assignment:

Pages 113-115: (#1-30)

Work to show:

For all of these problems you are to use the 5-step process that we learned in class. This is not the same as what is in the textbook. The 5 steps should be numbered, and they include the following:

1. Find: (Write down what you are trying to find.)
2. Let statement: (Establish the variable being used. If you have more than one quantity, always start with the one you know the least about.)
3. Equation (Translate the information not yet used into an equation.)
4. Solution (When you finish solving the equation, circle your solution. If you have more than one quantity listed in step 2, write down what they equal as well.)
5. Conclusion (Write a sentence answering what you were told to find.)

#1-2: Remember that *rate x time = distance*.

#3: The answer that you get when you solve the equation is not a whole number. Remember to answer the question asked, which is how many times he can eat out. You can't eat out a fraction of a meal.

#5: There's a number in this problem that is extra information and you won't use it. Can you tell which one it is? Also note that if you see a rate (key word to look for is "per" like in "lb. ***per*** acre") it tells you what you will multiply. In this problem, you are given "20 lbs. per acre" so if you multiply 20 times the number of acres you get the total number of pounds. Take the rate times the number represented by what comes after the "per."

#6: Another clue that you have a unit price is the word "each." If items sell for $4 each, then for the total cost you will take $4 times the number of items sold.

#7-8: These problems use *rate x time = distance* for the equation.

#11: This problem uses *rate x time = distance* for the equation.

#12: Notice that you have 2 different units of measure. You know that 6 inches times how many slats you have will give you 20 feet, but in order to do this problem you have to either change both measurements to feet or to inches. Inches would probably be easier.

#13: Each of the pieces cut will be the same length, so x will be the length of *each* piece.

#14: If the boxes were $5 each and he spent $20, how many boxes did he buy? Now if you take the number of boxes times the number in each box, you should get 52.

#16: The cost of the light plus the extra $112 that he had to pay must equal the cost of all of the items he bought in exchange.

#17: He gets paid $30 for *each* job. Remember that "each" is telling us a rate. His total income from mowing would be $30 times how many mowing jobs he did.

#18: Again, note the word "each."

#20: Remember that *rate x time = distance*. In this case we have 2 different rates and times to calculate 2 different parts of the race. You will need to add the results of both *rate x time* calculations to get the total distance of the race. It is also important to notice that the rates are in feet/minute but the distance of the race is in miles. You need to change miles into feet. To do this, multiply the number of miles times 5280, since there are 5280 feet in 1 mile.

#21: Like the last problem, you have 2 amounts that you have to calculate and add to get the total of $20. You are given unit rates, so multiply the rate times how much you bought to get the total cost. You need to do this for both types of coffee and then add them together to get $20.

#22: This is one of those problems that has 2 quantities – the number of boys and the number of girls. That means we need 2 statements for step 2. Ask yourself what you know about the number of boys. Then ask yourself what you know about the number of girls. The answer to one of those questions is "nothing." Let x equal that amount. Then write down what the other amount would equal based on the variable that you set. For your equation, if you add the number of boys and girls, you get 80. Make sure your step 5 conclusion answers your step 1 for what you are told to find.

#24: Notice that the word "per" is in this problem twice, referring to rates. If you are given a price per pound, multiply the price times the number of pounds.

#27: You have 2 rates given. Take each rate times the number of hours doing that job to find out how much money he made. Then add these 2 amounts to get $738.

#29: This problem has 2 amounts involved, so you need two statements for step 2. Let x = the number of students who attend. If twice as many adults attended, how would

you represent the number of adults? Now you need to take the number of adults times the adult price per ticket and the number of students times the student price per ticket and add them to get the total sales amount of $960.

#30: This is one of those problems that has 2 quantities – the number of minutes for Elisabeth and the number of minutes for Heather. That means we need 2 statements for step 2. Ask yourself what you know about the number of minutes for Elisabeth. Then ask yourself what you know about the number of minutes for Heather. The answer to one of those questions is "nothing." Let x equal that amount. Then write down what the other amount would equal based on the variable that you set. For your equation, if you add the number of minutes for both, you get 23. Make sure your step 5 conclusion answers your step 1 for what you are told to find.

Pages 118-119: (#1-8, 9-29 odd, 42-51)

Work to show:

#1-8: Show all numbers on one Venn diagram.
#9-19: Solve all equations, showing all steps. Then write "yes" or "no."
#21-29: Show calculation for each of the 4 numbers.
#42-45: Show all steps solving equations.
#46-49: Show one calculation per line.
#50-51: Answers only

#9-11: If an equation has solutions over the set of whole numbers, that means the solution is a whole number. So if the equation's answer is negative, for example, then the equation would not have solutions over the set of whole numbers since a negative number is not a whole number. So for these problems, solve them and see if the answer is a whole number.

#13-15: For these problems, solve them and see if the answer is an integer. If it is, then the equation has a solution over the set of integers.

#17-19: For these problems, solve them and see if the answer is a rational number. If it is, then the equation has a solution over the set of rational numbers.

#21-29: Put each of the 4 numbers given into the inequalities and see if you get a true statement. If you do, that number is a member of the solution set. Show work like this:

Problem: Which numbers are members of the solution set: $7x < 49 \text{ for } 4, 8, 10, 11$

Your solution should look like this:

$7(4) > 49$	$7(8) > 49$	$7(10) > 49$	$7(11) > 49$
$28 > 49$	$56 > 49$	$70 > 49$	$77 > 49$
False	True	True	True

$Solution$: $\{8, 10, 11\}$

#46-49: Underline the calculation for each step and carefully follow the order of operations.

#50-51: Use n for the number.

Page 124-125: (#1-27 odd, 37-44)

Work to show:

#1-5: Draw a separate number line for each of these.
#7-27: Write the inequality, show what is being done to each side, and solve.
#37-40: Show all work and calculations.
#41-46: Answers only.

#1-5: If there is an equal bar, then the circle is filled in. If it is just < or > then the circle is open. To decide which side to shade, stick a number into the inequality and see if it's true. Shade the true side. Do not shade the false side. [Side note: remember that for inequalities, the symbol always points to the smaller number. For example, 5<7 reads "5 is less than 7" because the symbol's small end (point) is towards the small number and the large end (open part) is towards the larger number.]

#7-11: Follow the same steps that we did for equations. Add or subtract whatever is needed to isolate the variable.

#9: Carefully reverse the sides of this inequality first, making sure that when you do so, the inequality is pointing at the same quantity it was when you started.

#13-19: These need to be solved by either multiplying or dividing. IMPORTANT: If you multiply or divide by a negative number you must flip the inequality.

#21-27: These are 2-step inequalities. Undo the addition or subtraction first, then the multiplication and division. Remember to flip the inequality if you multiply or divide by a negative number.

#37: Since there are no ( ) around the -7, the square is only on the 7, not the "-".

#39: Since that 3 is an exponent on a product inside the ( ), the 3 needs to go on each factor inside the ( ). Make sure you don't forget to put it on the 2.