Week 6 Pre-Algebra Assignment:

Day 1: pp. 102-103 #1-35 odd (Let Statements and equations only for #27-35)
Day 2: pp. 102-103 #2-34 even (Let Statements and equations only for #26-34)
Day 3: pp. 106-107 #1-37 odd (Let Statements and equations only for #31-37)
Day 4: pp. 106-107 #2-38 even (Let Statements and equations only for #32-38)
Day 5: p. 90 #43-52, p. 98 #45-54, p. 104 #44-53, p. 108 #48-57

Notes on Assignment:

Pages 102-103: (#1-35)

Work to show:

#1-4: Answers only
#5-25: Write the equation, show what is being done to each side, and solve. (See the example below.)
#26-35: Write the let statement and equation only. Do not solve.

General Notes: Remember that when solving an equation we need to keep the equation balanced like a teeter-totter. That means we have to do the same thing to *both* sides of the equation. You can either think of these as reversing the order of operation, or follow the following steps:

1. Clear all parentheses and grouping symbols.
2. Isolate the variable term
3. Multiply or divide to solve.

Problems should be done as follows:

$$3x - 4 = -10$$
$$3x - 4 + 4 = -10 + 4$$
$$3x = -6$$
$$\frac{3x}{3} = \frac{-6}{3}$$
$$x = -2$$

#3: There are actually 2 correct answers for this problem. You could clear the parentheses by doing the Distributive property, or you could divide both sides by 3.

#7: Be careful as you subtract 8 from both sides, because that gives you -16 – 8 on the right. Change the subtraction to addition, so that you have -16 + -8.

#13: Remember that it's the -4 that we need to undo, *not* the 3. The variable term is on the right, not the left side. If you would like to pick up each side and switch it to the other side so that it reads $\frac{r}{9} - 4 = 3$ you can do that.

#19-25: If we put a number in for the variable, we would add or subtract first, and then do the division, so we need to reverse that process, which means we need to undo the division first and then the addition or subtraction. So, for all of these problems, first multiply both sides by the number needed to undo the division.

#26-35: You need to write a let statement first for these. You can use whatever variable you want. (The variable you choose may not match the one in the solutions, and that's ok.) Then write an equation. You do **not** need to solve these.

#27: Remember that the cost of the material is the product of the number of yards times the cost per yard (our variable).

#29: If you take the cost of the perfume and subtract $10, you get the amount of money her paid ($140).

#30: Add the total price for the 4 shirts to the price of the ties to get $155. Remember to multiply the price of each shirt (the variable) times 4, since you are buying 4 shirts.

#33: Let x = the amount spent on labor. This is also the same as the amount spend on materials. Those 2 amounts added to $3000 should equal his total of $10,000. You can also say that those 2 amounts have to add to 10,000 – 3000.

#34: Remember that 1/3 ***of*** something means 1/3 ***times*** that something.

#35: There are 8 workers, so they will share equally in the amount left after each receives their initial amount. If *x* = the equal share of the leftover money, then 8*x* is what the total amount of leftover money is. If you add that to everyone's initial amount, it should all add up to $22,840.

Pages 106-107: (#1-37)

Work to show:

#1-10: Show any work needed.
#11-14: Write the equation, show any simplification and what is being done to each side as you solve the equation.
#15-18: Write the let statement and equation only. Do not solve
#19-30: Write the equation, show any simplification and what is being done to each side as you solve the equation.
#31-38: Write the let statement and equation only. Do not solve.

General Notes: When solving an equation, you can combine like terms that are together on the same side of the equal sign at any time. That should always be done before any "undoing" operation is performed.

Problems should be done as follows:

$$7x + 12 - 3x = 4$$
$$4x + 12 = 4$$
$$4x + 12 - 12 = 4 - 12$$
$$\frac{4x}{4} = \frac{-8}{4}$$
$$1x = -2$$
$$x = -2$$

#3: Whenever you have a variable with no coefficient, put a 1 in front of it. That makes this problem read $-1z - 5z$

#4: Think of this as $15g + (-28g)$. Remember that if the signs are opposite, you subtract $28g - 15g$ and then decide what sign dominates.

#11-14: There are like terms that need to be combined *before* you start solving the equation by undoing any operations.

#15-18: You need to write a let statement first for these. You can use whatever variable you want. (The variable you choose may not match the one in the solutions, and that's ok.) Then write an equation. You do **not** need to solve these.

#16: When there are two quantities involved, you need a Let statement and one more statement. Start by letting $x =$ the amount that you don't know anything about. In this case, let $x =$ the number of losses. We know something about the number of wins (it's twice as many as its losses) but we don't know anything about the number of losses. So we let $x =$ the number of losses. Our next statement should be $2x =$ the number of wins. Then because they played nine games altogether, add x and $2x$ to get 9. The answer should look like this:

Let $x =$ the number of losses
$2x =$ the number of wins
$x + 2x = 9$

#17: Since you don't know anything about the smaller number, let x = the smaller number. So you have:

Let $x =$ the smaller number
_____ = the larger number

How would you represent "four times the smaller number" to fill in the blank?

Once you have your 2 quantities filled in, you can write the equation. Since the sum of the two numbers is 25, add your two quantities above to equal 25.

#18: Since you don't know anything about the second number, let x = the second number. So you have:

Let x = the second number

_____ = one number

How would you represent "one more than twice the 2nd number" to fill in the blank?

Once you have your 2 quantities filled in, you can write the equation. Since the sum of the two numbers is 91, add your two quantities above to equal 91.

#19-30: There are like terms that need to be combined *before* you start solving the #19-30: There are like terms that need to be combined *before* you start solving the equation by undoing any operations. Sometimes there are constants (numbers) to combine instead of variable terms.

#20: Put a 1 in front of the x, and also change the "minus minus" to "plus plus." Then solve.

#21: If you prefer to have the variable terms on the left, rewrite this as $-4y + 7y = -18$.

#27: This has numbers and variable terms to combine. Don't get freaked out by the 0 on the right. It's a number like any other number. Follow the process.

#28: This has 3 variable terms to combine. Put a 1 in front of the 1 so you add that correctly with the other terms.

#31-38: You need to write a let statement first for these. You can use whatever variable you want. (The variable you choose may not match the one in the solutions, and that's ok.) Then write an equation. You do **not** need to solve these.

#31: Remember that the amount of money you spend on doors is found by multiplying the number of doors times the price. So if you have 4 doors and each costs x dollars, the amount of money spent on those 4 doors is $4x$.

#32: This is done the same way as #31.

#33: This problem actually needs 2 Let statements. They should look like this:

Let x = the number of large sandwiches sold

$2x$ = the number of regular sandwiches sold

When there are 2 quantities involved, we always let our variable equal the one we know the least about. In this case, it's the number of large sandwiches. I know something about the number of small sandwiches. It's twice the number of large sandwiches, which we show by using $2x$. Now multiply each number of sandwich type times the cost of that type of sandwich, and those amounts should add up to 585. The equation would be $4(2x) + 5x = 585$.

#34: This is just like the one we did in class.

#35: This one should also have 2 Let statements. Start by letting x = the price per pound of the ground beef.

#36: The amounts given are for monthly payments, so you need to multiply each by the number of months (your unknown) to get the total paid.

#37: Use 2 Let statements. Let x = the original price. That would make $2x$ = the more expensive price.

#38: Use 2 Let statements. Let x = the time it takes from home to Jones Corner. That would make $2x$ = the time it takes from Jones Corner to Summer Town.

Page 90: (#43-52)

Work to show:

#All problems: Show any work needed.

Page 98: (#45-54)

Work to show:

#45-50: Show any work needed.

#51-54: Show the expression with positive exponents, then simplify.

#51-54: Remember that to make an exponent positive, you need to "kick it" to the other part of the fraction.

Page 104: (#44-53)

Work to show:

#44-49: Write the expression, substitute in your numbers, and evaluate.
#50-53: Show any work needed.

#50: Remember that when you multiply, if you have an odd number of negatives, the answer is negative.

#51: Follow the order of operations. Multiply before you subtract.

Page 108: (#48-57)

Work to show:

All problems: Show any work needed.

#48-51: Remember that only one kid goes in the tub at a time, so only one number goes into the absolute value tub at a time. If there is more than one number in the brackets, simplify down to one number before throwing it in the tub.

#56: Ask what changed from the left side to the right side, and then name the property.