Preparing for the final exam.

First of all, thank you for your fine work all term !!!!!!

Here is a list of items to do:

- Read over all of your notes very slowly.
- Get new paper and work Test #1 and Test #2. Please work the problems just as would on a test with all of the correct steps.
- After Test #2, we did the following:
  - Division with decimals.
  - Order of Operations
  - Ratios, Proportions and Percent's
- Here are some problems to work from the last three topics we covered in class. Write down the following problems on a piece of paper and then work them with all of the correct steps

A1	Simplify	$42 - 3[4^2 - (5 - 1)]$
A2	Simplify	$-5[10 - (3 - 4 \cdot 2)^2]$
A3	Simplify	$\frac{\sqrt{1 + 8 \cdot 3} + \lvert -18 - 7 \rvert}{-2 - (-2)^3}$
A4	Solve	$\frac{3}{16} = \frac{x}{32}$
A5	Convert to a Decimal	$\frac{1}{8}$
A6	Divide	$42.8 \div 3.2$
A7	Draw picture, setup proportion and solve.	A man is 6ft tall and cast a shadow that is 2ft. A building cast a shadow that is 20 ft. How tall is the building?
A8	Setup percent proportion and solve. [See Page 354]	A donut machine puts out 600 donuts an hour. Unfortunately, they are all not perfect. Every hour, 18 of the 600 donuts are defective. What is the percent of defective donuts?

I also want to present some information on conversions. It will **not** be on the test. Many of us have had to convert when making food, pastries, bookcases, houses, etc. It is sometimes difficult to figure out when to divide or multiply. Ch. 7 shows conversions using conversion factors. Conversion factors always have the value of one. For example, $\frac{1ft}{12in}$, has the value of one since 1ft and 12in measure the same distance and we are dividing the same thing by the same thing, which is one. Inside of the very back cover, you will see conversions for length, weight, time, etc. We can make a conversion factor out of any statement that has an equal sign or an approximately equal sign.

We do the conversion by starting with are given measurement and then multiply by as many conversion factors as needed to get the units we want. Here is an example. ***How many cups are in one gallon?*** Now, some of you know this from cooking or some other experience, but we want to just use the table in the back and we will look at the ***Capacity*** section.

Math Steps	Comments
$\frac{1gal}{1} \cdot \frac{4qt}{1gal} \cdot \frac{2pt}{1qt} \cdot \frac{2c}{1pt}$	We want to end up with cups so we have to go from gallons to quarts to pints to cups. It is key to write the conversion factors so that units cancel out. If you notice the gallons is on top of 1st fraction and in the bottom of the second fraction.
$= \frac{1gal \cdot 4qt \cdot 2pt \cdot 2c}{1gal \cdot 1qt \cdot 1pt}$	When we multiply fractions, we put all factors in one fraction.
$= \frac{1\cancel{gal} \cdot 4\cancel{qt} \cdot 2\cancel{pt} \cdot 2c}{1\cancel{gal} \cdot 1\cancel{qt} \cdot 1\cancel{pt}}$	We now play Zorro and can cancel the same units in the numerator and denominator and we will just end up with the ***c*** for cups.
$= \frac{1 \cdot 4 \cdot 2 \cdot 2c}{1 \cdot 1 \cdot 1}$	We write what is "leftover" and that is, the numbers and the ***c*** for cups.
$= \frac{16c}{1}$	We multiply out the numbers in the numerator and denominator.
$16c$	We then simplify the fraction

We can finish the worded problem by answering with a sentence.

There are 16 cups in one gallon.