Solving Application Problems

There is no magic to doing application problems. The more you practice translating ‘English’ to ‘math’ the easier that process becomes.

Procedure:
1. Understand the problem. What am I looking for? What info am I given?
2. Translate the problem into an equation.
   a. Label the unknown quantities in the problem (as in section 3.1).
   b. Using the variable(s) from part (a), write an equation.
3. Solve the equation.
4. Check the answer in the original wording of the application. Is the answer reasonable?
5. Answer the question asked. Don’t need a sentence; do need the units.

The instructions you MUST follow for the application problems are:
   a) Define any variable you use.
   b) Write an equation that represents the relationships in the word problem.
   c) Solve the equation.
   d) Answer the question.

Don’t have to label each part BUT you must do all of them.

Example 1) During the ski season, a ski shop sold 4 times as many gloves as scarves. Determine the number of gloves and scarves sold if the difference between number of gloves and scarves was 240.

   a) Define: number of scarves =
   number of gloves =

   b) Equation: difference between number of gloves and scarves was 240
   number gloves – number scarves = 240

   c) Solve:

   d) Answer: _______ scarves; ______ gloves

Example 2) The C&G corporation has a supply of 3600 tables. It wishes to ship 225 tables each week until its supply drops to 2000. How long will this take? Round to the nearest tenth.

   a) Define: x = number of weeks

   b) Equation: 3600 drops to 2000 by shipping 225 every week

   c) Solve:

   d) Answer: about _______ weeks
Example 3) According to the Kaiser Family Foundation, in the U.S., the amount of time per day spent by 8-18-year-olds watching TV is 16 minutes more than 5 times the number of minutes spent reading. If the total time per day spent reading and watching TV is 274 minutes, determine the number of minutes spent watching TV.

Example 4) At Jay’s Gym there is a one-time membership fee of $100 plus dues of $40 per month. At Joe’s Gym there is a one-time membership fee of $50 plus $50 per month. How long will it be before the total cost is the same for both gyms?

Example 5) At a 1-day 35% off sale, Jay buys a sweater for $45.99. What was the regular price of the sweater?
Example 6) Jay bought a copy machine for his company that cost $1800 and a one-year maintenance plan that costs 2 cents per copy made. If he spends a total of $2400 that year, how many copies were made?

Example 7) According to Wikipedia, the best-selling album in 2005 was Mariah Carey’s *The Emancipation of Mimi*. The best-selling album in 2004 was the album *Confession* by Usher. *Confession* sold 0.94 million copies less than twice the amount *The Emancipation of Mimi* sold. The sum of these two albums was 13.97 million copies. Determine the sales of both albums.

Example 8) Joan receives a weekly salary of $400 plus a 5% commission on the total sales she makes. What must her sales be in a week if she wants to make a total of $700?