

Due on Friday, February 19th by 9pm - uploaded as a single PDF to theSpring.

Show all of your work on a SEPARATE piece of paper! You will not receive full credit if I cannot determine how you arrived at your answer.

- 1) Which of the following is **BETTER**?:

A) having a stock that goes up 30% on Monday, then drops 20% on Tuesday.

OR

B) having a stock that drops 25% on Monday, then goes up 30% on Tuesday.

In each case, what is the net percent gain or loss?

- 2) Professor Erin Lopez's fastest marathon time was 2 hours and 56 minutes. Her husband, Mike, ran a fastest marathon time of 3 hours and 37 minutes. Fill in the following sentences and show how you arrived at each answer:

- a. Erin's time was _____ % faster than Mike's.
- b. Mike's time was _____ % slower than Erin's.
- c. Mike's time was _____ % of Erin's.

- 3) The flash of lightning travels at the speed of light, which is about 186,000 miles per second (so fast that it arrives almost instantaneously!). The sound of lightning (thunder) travels at the speed of sound, which is about 750 miles per hour. If you see a flash of lightning, then hear the thunder 4 seconds later, how far away is the lightning?
- 4) A box of Jell-O costs \$1.25 and makes 2 cups. How much would it cost to fill a swimming pool 4 feet deep, 8 feet wide and 12 feet long with Jell-O? (Note: 1 cubic foot is about 7.5 gallons).
- 5) A TV is on sale for \$75 off its original price. If this is a 15% decrease, find:
- a) the sale price after the markdown.
 - b) the final price with a 6.25% tax rate.
- 6) When Ibuprofen is given for fever to children 6 months of age up to 2 years, the usual dose is 5 milligrams (mg) per kilogram (kg) of body weight when the fever is under 102.5 degrees Fahrenheit. How much medicine would be the usual dose for an 18 month old weighing 26 pounds?

- 7) It takes a hose 5 minutes to fill a rectangular aquarium 9 inches long, 10 inches wide, and 13 inches tall. How long will it take the same hose to fill an aquarium measuring 1.5 feet by 2 feet by 2.5 feet?
- 8) A long year-end status report for work is 82 pages long. You need to print 19 copies for a meeting next week. How much is the paper going to cost for those reports? Paper is sold in reams (500 pages) for \$3.99 each. Give your answer to the nearest cent, only for the paper you use (partial reams are OK)
- 9) You're planning on making 4 meatloaves for a party. You go to Target to buy breadcrumbs, and see they are sold by the canister.
- a) How many canisters do you need to buy?
- b) If you use your Target RedCard and get 5% off your purchase and the tax rate is 6.35%, how much will you spend on breadcrumbs?

Below are some questions you may have, as well as their answers:

- How much breadcrumbs does the recipe call for?
 - It calls for $1\frac{3}{4}$ cups of breadcrumbs.
- How many meatloaves does the recipe make?
 - It makes 1 meatloaf.
- How many servings does that recipe make?
 - It says it serves 9.
- How big is the canister?
 - It is cylindrical, 3.5 inches across and 7 inches tall.
- What is the net weight of the contents of 1 canister?
 - 15 ounces.
- How much does a canister cost?
 - \$2.49
- How much does a cup of breadcrumbs weigh?
 - I'm not sure, but maybe something from the nutritional label will help.

Nutrition Facts	
Serving Size: 1/3 cup (30g)	
Servings per Container: about 14	
Amount Per Serving	
Calories 110	Calories from Fat 15
% Daily Value*	
Total Fat 1.5g	2%

- 10) Come up with your own word problem to solve using the topics we have covered in class (percents, percent change, rates, proportions, unit conversions, dimensional analysis). Points will be given for creativeness (think baking, shopping, running - some of my favorite things!). Once you have written your problem, SOLVE IT!