Week 5 Packet – Regular Chem

This is _hopefully_ all the handouts we will use this week in Regular Chem. Due to the challenging logistics of this year, please offer grace if I miss a handout or if things change during the week. **Please note** – You do not _have_ to print. I am just providing the option to make things easier for those who want to print. All of these pages are on the class website, always! www.mychemistryclass.net

*I will put the glue ins for the notes on the front and/or back of the packet cover page like this – since you don't need the cover page for anything you can always just cut these out and glue them in. Trying to save some paper for those of you who are printing! ☺

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Some Useful Conversion Factors

Metric to Metric		English to Metric		English to English	
1 km	= 1000 m	1 mile	= 1.609 km	1 ft	= 12 in
100 cm	= 1 m	1 in	= 2.54 cm	1 yd	= 3 ft
1000 mm	= 1 m	1 m	= 39.37 in	1 mile	= 5280 ft
1000 mg	= 1 g	1 ft^3	= 28.32 L	1 gallon	= 4 qt
1000 g	= 1 kg	1 L	= 1.057qt	1 lb	= 16 oz
1000 ml	= 1 L	1 lb	= 453.6 g	1 quart	= 4 cups
1 cm^3	= 1 ml	1 g	= 0.03527 oz	1 pint	= 2 cups

Dimensional Analysis WS   Solve USING DIMENSIONAL ANALYSIS LINE METHOD.
Fill in any missing numbers, units or answers.

1) Convert 32.7 in into ft

32.7 ft	12 in	=	in
	1 ft		

2) Convert 20.1 cm to in

cm	1 in	=	in
	cm		

3) My cat, Harley, weighs 8.7 lbs. How much does she weigh in kilograms? **(3.95)**

g	kg	=	kg
1 lb	g		

4) Convert 8.4 Kg into pounds

lb	=
kg	

5) Convert 3100 in to mi **(0.049)**

=

6) Convert 14 weeks into seconds

=

Complete the rest of the problems on the binder paper of your notebook.

7) Convert 5.93 yards into mm **(Answer: 5422.4)**

8) You're throwing a pizza party for 15 people. Each person will eat 4 slices. You call up the pizza place and find that each pizza will be cut into 12 slices, and each pizza will cost you $14.78. How much is the pizza going to cost you? You only have $70. Will you have enough money? **(Answer: 73.90, no)**

9) The bedroom of a house is 1,200 cubic meters. We know that there are 3.4×10^9 particles of dust per cubic meter. How many particles of dust are present in the bedroom of our house? Eww!

10) Find out the weight of 6 billion (6,000,000,000) dust particles in pounds, if one dust particle has a mass of 7.53×10^{-10} g.

Double Unit Dimensional Analysis
SOLVE ALL USING DIMENSIONAL ANALYSIS!
Some starting values are in italics as a hint.

1) How many kilometers per hour are equivalent to *1.45×10^7 millimeters per minute*?

1.45×10^7 mm	1 m	1 km	min	=	km
1 min	1000 mm	1000 m	1 hr		hr

2) How many inches per day are equivalent to *45.7 feet per second*?

ft	in	sec	min	hr	=	in
1 sec	ft	min				day

3) If you work *40 hours per week*, and make $15 per hour, how many dollars per year do you earn?

40 hr	$	wk		=	$
1 wk	1 hr	day	yr		yr

4) Light travels at a speed of 186,000 mi/sec. How many km/hr does it travel?

186,000				=	
1					hr

5) A car travels 42.00 miles on a gallon of gasoline. How many km/L is this?

6) There are *6.02×10^{23} atoms of carbon per 12 grams*. How many atoms of carbon per pound are there?

7) Bathtubs can drain 6 gallons per minute. How fast do they drain in oz per second?

Dimensional Analysis

19 inches to feet

840 inches to cm

5,400 inches to miles

2300 seconds to weeks

In my class, each student is given 3 pens. If there are 8 pens in one package, priced at $1.88 per package, and I have 28 students in my chemistry class, what is the total cost of giving away pens?

You need to drive 350 miles from San Ramon to Los Angeles. Your car gets an average of 42 miles per gallon of gas. Gas costs $3.00 per gallon. How much money will you spend on gas to drive from here to LA?

Remember to trim paper to fit better!