Significant Figures (Sig.Fig.) and Dimensional Analysis (DA) Practice
From Bauck, ChemFiesta.com and ScienceSpot.net

SIG.FIGS.
PART 1: How many significant figures are in each of the following numbers?

1)   5.40
2)   210
3)   801.5
4)   1000
5)   101.0100
6)   -311
7)   50.0

8) 1.2×10^3
9)   0.00120
10)   0.0102
11) 9.010×10^{-6}
12)   2370.0
13)   50
14)   606

PART 2: Calculate the answer to the correct number of sig.figs., using the rules.

15) 13.9 + 98.08
16) 2.0987 x 2345
17) 12.09 / 12.8
18) 12.039 / 34.9
19) 12.098 + 13.09
20) 12.98 - 6.098
21) 13.9 - 13.70
22) 13.98 x 24.09

PART 3: Short answers – Sig.Figs and D.A.

23)   Why are significant figures important when taking data in the laboratory?
24)   Why are significant figures *not* important when solving problems in your math class?
25)   Using two different instruments, I measured the length of my foot to be 27 centimeters and 27.00 centimeters. Explain the difference between these two measurements.
26)   What is dimensional analysis? What are "dimensions"?
27)   What is a conversion factor?

Dimensional Analysis (DA):

PART 4: DA practice problems

NOTE: The DA on the next test and the rest of the course will involve chemical calculations, but for now we are reviewing the skills of unit manipulation and cancellation with simple measurements before mole math is introduced.

28) How many feet are there in 341 centimeters? (exactly 2.54 cm = 1 in)

29) How many seconds are there in 34.5 years?

30) How much gas money should Lori save for her 1500-mile road trip? Gas is $2.30 per gallon and her car gets 29 mpg (miles per gallon).

31) How many miles are there in 3.44 x 10^8 inches? (5280 ft = 1 mi)

32) Macho Mel can lift 200.00 kilograms with ease. How much is this in pounds? (2.2 lbs. = 1 kg)

33) The distance between Happyville and Sadville is 60.0 mi. How far is this in m? (1.61 km = 1 mi.)

34) A can of Cheap-O soda holds 355 mL of soda. How many milliliters would be in 2 cans of soda?

35) A cookie recipe (1 batch) calls for exactly 1 pound of butter. How many grams of butter would be needed for 3 batches? (28.3 g = 1 oz)