Estimation, Dimensional Analysis and Significant figures

Calculations Book (chapters 1, pages 7-19)

Objectives:

The students should be able to

1. Properly use units, units conversion and **dimensional analysis method**
2. Apply **estimation** to predict and confirm pharmaceutical calculations
3. Calculate **significance figures** and ranges of accepted limits

Reading

Chapter 1: Page 7 (dimentional analysis)-19

Dimensional analysis, significant figures

Also please have a copy of table 2.3, and 4.2 with you during our sessions as we will use them

You need to know the following for the iRAT

Proportions

It is the equality between 2 ratios. Remember to indicate units, and set the correct proportion. 30 grams of aspirin are used to prepare 250 tablets, how many mg of aspirin will each tablet contain? How can we set the proportion?

1. $\frac{30g}{250tablets} = \frac{xg}{1tablet}$

2. $\frac{xg}{30g} = \frac{1tablet}{250tablets}$
3. $\frac{30g}{xg} = \frac{1tablet}{250tablets}$
4. $\frac{30g}{xg} = \frac{250tablets}{1tablet}$
5. All of the above
6. **All except 3**

Estimation

Before solving a problem, estimate the answer.
Round your numbers to one digit.
Perform the calculation, *preferably without calculator*.
Do the exact calculation and compare the results.

Example : 2025 grams of cream are used to fill 45 cream vials. How many grams does each vial contain? USE Estimation

Dimensional Analysis

A child dose of medicated syrup is 0.1 mL /kg once a day. How many teaspoonfuls should be given to a 55 lb child/day?
You should know that
1 kg = 2.2 lb
1 tsp = 5 mL