



Math Study Strategies

Math for Nursing Basic Rules for Dimensional Analysis in Dosage Calculation

To assure the prescribed medication comparing with the hand on products the nurse need to use dimensional analysis for decimal calculations.

There are some basic rules that apply for oral, parenteral, intradermic, subcutaneous or as well as intravenous administration of medication.

Theres basic rules are:

- ◆ Correct entry of factors in a dimensional analysis equation reading carefully the physician's prescription as well as the labels of the available medications.
- ◆ In the dimensional analysis (da) calculation the unit of measure we are looking for needs to be written first, and this needs to be in the numerator.
- ◆ All factors must include quantities and unit of measures.
- ◆ The cancelations of units of measure are done either diagonal (cross) or vertical, never horizontal.
- ◆ There are conversion factors that need to be used ([hours to minute](#), [grain to milliliters](#), [kg to pound](#), [grams to milligrams](#) etc) Nurses need to know all equivalencies between the metric, apothecary and house hold system of units of measure.
- ◆ The numerator of the starting factor never canceled.
- ◆ The rounding of the final value depend on the type of syringe used, the method of administration (IM, IV s.c., ID) and the type of medication.