



# Math Study Strategies

## Math for Nursing

### Converting between Fractions and Decimals

Decimal fraction are fractions in which denominators (the number showing in how many parts is divided the whole) of the fraction is 10 or a multiple of 10.

$$\frac{1}{10}, \frac{1}{100}, \frac{1}{1000}, \frac{1}{10,000} \text{ and so on.}$$

We can have different values in the numerator (the number showing how many parts are taken out from the whole) such as 4 or 327, but the denominator of a decimal must **ALWAYS** be a multiple of 10.

We usually use *decimal notation* to simplify their use. Decimal notation uses the decimal point (.) instead of the fraction line. Numbers are arranged according to their decimal place value from the decimal point. The number **30,42896** can be arranged into the following decimal place values:

Tens	Ones	Decimal point	Tenths	Hundreths	Thousandths	Ten Thousandths	Hundred Thousandths
3	0	.	4	2	8	9	6

$$\begin{array}{l} \text{Numerator} \rightarrow \frac{2}{10} \leftarrow \text{Denominator} \\ \frac{2}{10} \Rightarrow 10 \overline{)2} \end{array} \quad \begin{array}{r} 0.2 \\ 10 \overline{)2.0} \\ \underline{-20} \\ 0 \end{array}$$

#### Converting Fractions into Decimals:

In Nursing Activities if the medication is liquid, then the amount is expressed as a decimal. If the denominator is different than 10, divide the denominator into the numerator of the fraction.

Example:

If the medication for a patient is  $\frac{2}{5}$  ml. We convert  $\frac{2}{5}$  into decimal taking the numerator (2) and dividing by the denominator (5).

$$\begin{array}{r} 0.4 \\ 5 \overline{)2.0} \\ \underline{20} \\ 0 \end{array}$$

Therefore:  $\frac{2}{5} = 0.4 \text{ ml}$

#### Converting Decimals into Fractions

To change 0.4 back into a fraction, remove the decimal point and place the four over 10. If 4 is in the tenths place,

$$\begin{array}{l} \text{If 4 was in the hundreths,} \\ \rightarrow 0.04 = \frac{4}{100} \end{array} \quad \rightarrow \quad 0.4 = \frac{4}{10}$$