Business Mathematics

Introduction

- Business plays a major role within our society. It is a creative and competitive activity that continuously contributes to the shaping of our society. By satisfying the needs and wants people cannot satisfy themselves, businesses improve the quality of life for people and create a higher standard of living.
- It is a way for individuals to provide goods and services to consumers, and at the same time, produce a profit for themselves. Businesses are not only important because they provide goods and services for consumers, but they also improve the economy and increase jobs for people within society which is an additional fact producing a higher standard of living.

Simple Interest

- When we borrow money, we pay a certain amount called interest for its use. When we deposit money in the bank, the bank is in effect borrowing and using our money. This is the reason why we are given an interest for our deposits. The amount of money borrowed is called principal, the percent of interest is called rate and the period of the loan is called time. In most cases the time unit for the stated rate is one year. It is expressed plus the interest it bears is called the amount.

In solving interest problems, we have to use the following formulas:

Interest = Principal x Rate x Time or **I = Prt**

Amount = Principal + Interest or **A = P + Prt = P (1 + rt)**

Example 1: A man borrowed ₱30,000 from the bank at the rate of 8% a year. What is the interest if it will be paid after two years?

$$I = Prt$$
$$I = ₱30,000 \times 0.08 \times 2$$
$$I = ₱4,800$$
$$A = 30,000 + 4,800 = 34,800$$

Example 2: Mr. Reyes secured a loan of ₱5,000 from a cooperative bank which charged him 12% interest for 3months. How much interest did he pay? What is the amount paid to the bank?

Expressing time as fractional part of the year, we obtain:

$$I = Prt$$
$$I = ₱5,000 \times 12/100 \times 3/12 = ₱150$$
$$A = P + I$$
$$A = ₱5,000 + ₱150 = ₱5,150$$

Two ways of computing Interest

The time unit for the stated rate is not always expressed as an exact number of years. As mentioned earlier if the time is given in months we express time as a fraction of a year, that is $\frac{number\ of\ months}{12}$ if the time is given in days.