## Lecture Outlines



## Introduction

Welcome to the First Lecture in this course unit. In this lecture we are going to learn about set theory.

The study of sets is important and thus popular in the business and economic world for three major reasons:

- Basic understanding of concepts in sets and set algebra provides a form of logical language through which business specialists can communicate important concepts and ideas.

- Set algebra is used in solving counting problems of a logical nature.

Example 1 − Sales in Physical Units

A product has selling price as sh. 200 whereas unit variable cost is sh. 140. the annual

fixed cost is sh. 720,000. You are required to determine the following (B.E.P.)

(a) breakeven sales units

(b) profit to be made if 20000 units are sold

(c) Sales required for a profit of Sh. 2,000,000

Solution:

a) B.E.P. is given by the formula:

b) E( in units) = fixed cost cm / CM = p-v = 200 – 140 = Sh 60

= 720,000 / 60 = 12000 units

The profit function is:

Π = 60 x 20000 - 720000 = sh. 480,000.

c) If a target profit is Sh T, then units, x required to make this profit is gven as:

X = (f + T) / CM

$$S = P\left(1 + \frac{1}{m/r}\right)^{m/r\ rt}$$

let m/r be x

Hence: $S = P\left(1 + \frac{1}{x}\right)^{x\ rt}$

But $1 + \frac{1}{x}\Big)^{x} = e$ provided $x \to \infty$

$$S = Pe^{rt}$$

**Thus, ----------formula for continuous compounding**