FINANCE: SIMPLE & COMPOUND INTEREST   04 AUGUST 2014

Lesson Description

In this lesson we:

- Work through key concepts and questions relating to:
  - Simple interest
  - Compound interest

Summary

Interest depends on three factors:

1)   The amount of money invested or borrowed (P)

2)   The duration of the investment or loan (n)

3)   The interest rate per period (r) [i=r/100]

Simple Interest

Interest is calculated on the original sum of money only

A= P(1+i.n)

E.g. Hire purchase agreements: The interest on a hire purchase loan is always charged at a simple interest rate and only charged on the amount owing.

Compound Interest

Interest is calculated on the original amount plus interest already earned

$A=P(1+i)^n$

Test Yourself

Question 1

Determine what sum must be invested at 8% compound interest p.a. to yield a million rand after 20 years.

A) R312 745.23

B) R214 548,21

C) R384 782.45

D) R154 789,65

Question 2

At what simple interest rate will R10 000 double after nine years?

A) 12.2%

B) 13.3%

C) 11.1%

D) 14.4%

Question 3

R3 000 is deposited in a savings account at 8% simple interest per year. Use the formula $A = (P + i.n)$ to calculate the amount of money in the savings account after four years.

A) R3800

B) R2980

C) R3960

D) R4200

Question 4

At what compound interest rate will R8 000 double in nine years if the interest is compounded annually?

A) 8%

B) 4%

C) 6%

D) 10%

Improve your Skills

Question 1

Joseph made a deposit of R 5 000 in the bank for his 5 year old son's 21st birthday. He has given his son the amount of R 18 000 on his birthday. At what rate was the money invested, if simple interest was calculated?

Question 2

Calculate the number of years needed to invest R 1 000 in order for it to accumulate to R 2 500. At a simple interest rate of 8;2% p.a.

Question 3

Morgan invests R 5 000 into an account which pays out a lump sum at the end of 5 years. If he gets R 7 500 at the end of the period, what compound interest rate did the bank offer him?

Question 4

Nicola wants to invest some money at a compound interest rate of 11% p.a. How much money (to the nearest Rand) should be invested if she wants to reach a sum of R 100 000 in five years time?