

REVISION: FINANCE

1 MAY 2014



Lesson Description

In this lesson we revise:

- How to complete finance calculations



Summary

Terminology

An **OPENING BALANCE** is the amount of money owed to a bank at the beginning of a month or day. It could also be the amount of money you have in the bank at the beginning of a month or day.

A **CLOSING BALANCE** is the amount of money still owed to a bank at the end of every month or day. It could also be the amount of money you have in the bank at the end of a month or a day.

A **DEPOSIT** is an amount of money that you pay into a bank or an account, OR it could also mean the amount of money that you need to pay up front before you purchase an item on Hire Purchase (which we discussed last week).

A **LOAN** is a sum of money borrowed from a bank or a finance company. Interest is charged on this loan.

LOAN LENGTH is the period of time for which an amount of money is borrowed.

A **FACTOR** is a value indicating what the repayment of a loan would be for every R1000,00 borrowed.

INTEREST is the amount of money paid to you in return for investing your money with a bank or finance company.

INTEREST RATE is the percentage at interest is calculated.

MONTHLY REPAYMENT is the amount of money that needs to be paid every month on a loan.

REAL COST is the actual amount paid for something (like a house or furniture) that was bought using a loan.

INFLATION is the average change in the prices of various goods or services over time.

INFLATION RATE is given as a percentage increase or decrease per annum.

Useful Formulae

Simple Interest

$$A = P(1 + i \times n)$$

Compound Interest

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

Where:

A = Amount with the calculated interest

P = Amount to be invested or the starting value

i = interest rate at the time of calculation

n = the number of times the interest is calculated

Hire Purchase = Deposit + (monthly instalments x number of months) + Monthly fee



Improve your Skills

Interest

Question 1

Consider the following formulae when answering this question which comprises of a set of multiple choice questions:

$$\text{Formula 1 - } A = P(1 + i)^n$$

$$\text{Formula 2 - } A = P(1 + i.n)$$

$$\text{Formula 3 - Interest} = P \times n \times i$$

On the day his son turns 19, a father went off to the bank and deposited R100 000,00 in a bank account that was offering 4,75% p.a. compound interest. Presume the interest rate remains unchanged and presume that the father leaves the R100 000,00 in the bank without depositing or withdrawing any money until the son turns 21 years old. As a 21st birthday present, the father withdraws all the money from the bank and gives the son the interest that was accumulated.

In each of the following, just write down the question number and the correct corresponding letter (eg. 1.6 – D):

1.1 Which formula should one use when working with this problem? (1)

- A: Formula 1
- B: Formula 2
- C: Formula 3
- D: Neither

1.2 The R100 000,00 is represented by: (1)

- A: P
- B: A
- C: i
- D: n

1.3 4.75% is represented by: (1)

- A: P
- B: A
- C: i
- D: n

1.4 4,75% can also be written as: (1)

- A: 475
- B: 4,75
- C: 0,475
- D: 0,0475

1.5 The value for n is: (1)

- A: R100 000,00
- B: 3
- C: 4,75
- D: 2

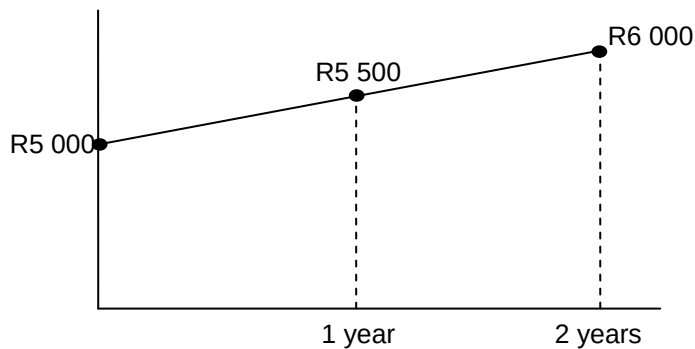
1.6 The father will give the son:

(3)

- A: R 109 725,63
- B: R 109 725,62
- C: R 9 725,62
- D: R 9 725,63

Question 2

Consider the following graph which shows an interest problem.



In each of the following, just write down the question number and the correct corresponding letter

1.1 Which formula should one use when working with this problem?

(2)

$$\text{Formula 1 - } A = P(1+i)^n$$

$$\text{Formula 2 - } A = P(1+i.n)$$

$$\text{Formula 3 - Interest} = P \times n \times i$$

- A: Formula 1
- B: Formula 2
- C: Formula 3
- D: Could use 2 and 3

1.2 The value for A is:

(2)

- A: R 5 000
- B: R 5 500
- C: R 6 000
- D: R 500

1.3 The value for P is:

(2)

- A: R 5 000
- B: R 5 500
- C: R 6 000
- D: R 500

1.4 The interest earned is:

(2)

- A: R 500 a year
- B: R 1 000 a year
- C: 20% a year
- D: 10 % a year

1.5 The interest rate is:

(2)

- A: R 500 a year
- B: R 1 000 a year
- C: 20% a year
- D: 10 % a year

Question 3

Complete the following table:

Month	Amount in the account at the beginning of the month	Interest rate = 4,5%p.a per year compounded monthly	Amount in the account at the end of the month
1	R 20 000,00		
2			

Banking

Question 1

R10 000 is deposited at an interest rate of 5,5% p.a., compounded monthly. The table below shows the opening balances, interest and closing balance at the end of each month for a period of 3 months as shown below:

MONTH	OPENING BALANCE	MONTHLY INTEREST	CLOSING BALANCE
1	R 10 000	R45,83	A
2	B	C	D
3	E		

Write down the missing values for:

- 1.1 A
- 1.2 B
- 1.3 C
- 1.4 D
- 1.5 E

Inflation

Question 1

Consider the table below which gives the inflation rate of a new particular motor vehicle over a period of time:

Period of Time	Inflation Rate
From 1 January 2005 to 1 January 2006	14%
From 1 January 2006 to 1 January 2007	6,75%
From 1 January 2007 to 1 January 2008	-4,5%

- 1.1 If the car cost R144 500 on 1 January 2005, then determine the cost of this same vehicle on 1 January 2006.
- 1.2 What would someone pay for this type of vehicle on January 2007?
- 1.3 What does the negative sign indicate in "-4,5%"?
- 1.4 What would a new vehicle cost on 1 January 2008?

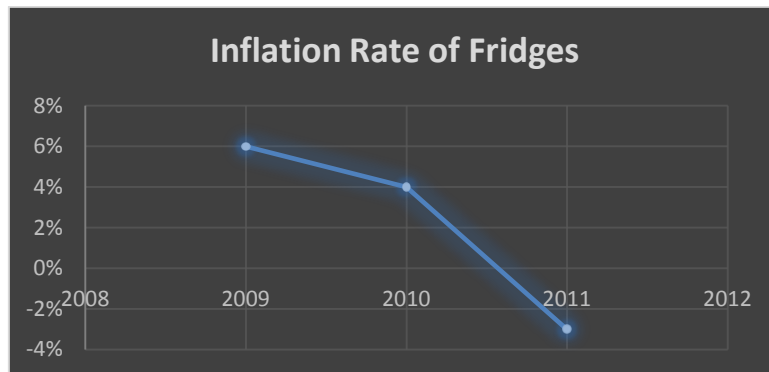
Question 2

Mr Mnisi works at "SUPA-SPAAR" and earns a net salary of R8 570,00 a month. Due to the fact that SUPA-SPAAR" is not doing well, Mr Mnisi does not get an increase in his salary the following year. Mr Mnisi has monthly expenses that amount to R7 850,00. Due to inflation his expenses rise by 6,9%.

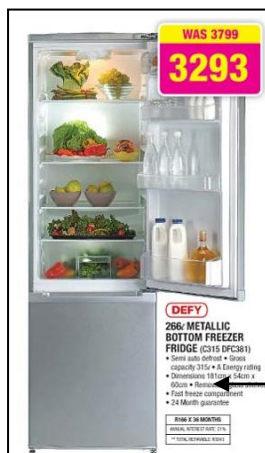
- What is a "net salary"?
- With the use of calculations, show what sort of financial position Mr Booboolezi will be in the year in which he did not get an increase?

Question 3

Consider the following graph which illustrates the inflation rate of Fridges over the past 3 years.



- Could one say that the price of the fridges decreased every year? Explain.
- A fridge is advertised as R3 293,00 in 2008. Because Mr Yen cannot afford to buy the fridge for cash, he buys it on Hire Purchase.



15% deposit

R166 a month for 3 years

R7,50 a month admin fees

- What would the fridge have cost Mr Yen after 3 years had he bought it on 1 January 2008?
- How much would the fridge cost Mr Yen if he were to buy it for cash on 1 January 2011?