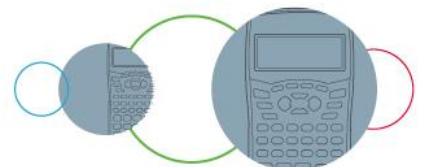


# SHARP

## Worksheet 7 Memorandum – Finance – Interest, banking and inflation

### Mathematical Literacy – Grade 11

1. Explain what the following investment terms mean:
  - a) Interest rate – The rate at which amount of money that is invested increases in value, expressed as a percentage and compounded monthly, quarterly or yearly.
  - b) Investment term (life) – The amount of time that a person commits to an investment.  
E.g.: 2 years.
  - c) Monthly payment – The amount of money that a person must pay every month into their investment.
  - d) Principal – The amount that a person invests initially.
  
2. Explain what the following loan terms mean:
  - a) Borrower – The person who is taking out a loan.
  - b) Deposit - a sum payable as a first instalment on the purchase of something or as a pledge for a contract, the balance being payable later.
  - c) Loan term (life) – The amount of time it will take a person to pay off a loan.
  - d) Lender – The person/institution that is giving somebody a loan.
  - e) Real (total) cost of a loan – The principal loan amount plus all the interest payable on the loan.
  - f) Interest rate – The rate at which a person is charged for loaning money, expressed as a percentage.
  - g) Residual – Also called a balloon payment. This is a part of a loan that is owed after the loan term, collected as a lump sum.
  
3.
  - a)  $R\ 12\ 999 \times 14\% = R\ 1\ 819.86$  deposit
  - b)  $R\ 13\ 191.39 \div 24\ months = R\ 549.64$  per month
  - c)  $R\ 1\ 819.86 + R\ 13\ 191.39 = R\ 15\ 011.25$
  - d)  $R\ 15\ 011.25 - R\ 12\ 999 = R\ 2\ 012.25$
  - e)  $R\ 12\ 999 - R\ 1\ 819.86 = R\ 11\ 179.14$   
 $R\ 11\ 179.14 + \left(R\ 11\ 179.14 \times \frac{x}{100} \times 2\ years\right) = R\ 13\ 191.39$   
 $R\ 11\ 179.14x \times 2 = R\ 13\ 191.39 - R\ 11\ 179.14$   
 $x = \frac{R\ 2\ 012.25}{R\ 11\ 179.14} \div 2$   
 $x = 18 \div 2 = 9\%$



- f)  $R\ 11\ 179.14 \times 9\% = R\ 1\ 006.12$   
 $R\ 15\ 011.25 + 1006.12 = R\ 16\ 017.37$
- g)  $R\ 16\ 017.37 - R\ 1819.86 = R\ 14\ 197.51$   
 $R\ 14\ 197.51 \div 36 = R\ 394.38$  per month over 36 months

4. a) *Taxable income = Salary + Travel allowance*

$$\text{Taxable income} = R\ 12\ 000 + R\ 2\ 000 = R\ 14\ 000$$

$$R\ 14\ 000 \times 12\ \text{months} = R\ 168\ 000$$

$$R\ 168\ 000 - R\ 165\ 600 = R\ 2\ 400$$

$$R\ 2\ 400 \times 25\% = R\ 600$$

$$\text{PAYE} = R\ 29\ 808 + R\ 600 = R\ 30\ 408$$

$$R\ 30\ 408 - R\ 12\ 080 = R\ 18\ 328$$

$$R\ 18\ 328 \div 12 = R\ 1\ 527.33$$
 PAYE per month

- b) *Taxable income – (Income tax + Bond + Retirement fund + UIF + Life insurance)*

$$= R\ 14\ 000 - (1527.33 + 1200 + 612 + 120 + 600)$$

$$= R\ 14\ 000 - R\ 4059.33$$

$$= R\ 9940.67$$

- c)  $R\ 1200 \times 6 \times 12 = R\ 86\ 400$

$$R\ 1200 + 12\% = R\ 1344$$

$$R\ 1344 \times 9 \times 12 = R\ 145\ 152$$

$$R\ 86\ 400 + R\ 145\ 152 = R\ 231\ 552$$

- d)  $\frac{R\ 231\ 552}{1 + \frac{8}{100} \times 15} = \text{Price of the flat}$

$$\text{Price of the flat} = \frac{R\ 231\ 552}{2.2}$$

$$R\ 105\ 250.91$$

5. a) CPI – Consumer Price Index measures changes in the price level of a market basket of consumer goods and services purchased by households.

- b)  $R\ 7.24 - R\ 5.45$

= R 1.79 Bread costs R 1.79 more in Jan 2014 than it did in May 2013.

- c)  $\frac{R\ 14.34}{R\ 10.79} \times 100 = 132.9$

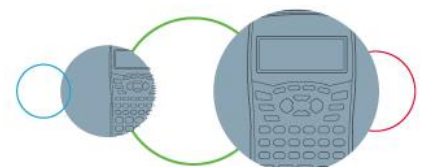
∴ The price of milk increased 32.9% from May 2013 to Jan 2014

- d)  $\% \text{ Inflation} = \frac{125.95 - 96.02}{96.02} \times 100$

$$\% \text{ Inflation} = 31.2\%$$

- e) No. Inflation is at 31.2% and the employees only received an increase of 12%. This is below the level of inflation.

- f)  $R\ 2\ 450 + 4\% = R\ 2\ 548$



6. a)  $(R\ 18\ 500 + (R\ 18\ 500 - 10\%)) - 10\%$   
 $= (R\ 18\ 500 + R\ 16\ 650) - 10\%$   
 $= R\ 35\ 150 - 3\ 515$   
 $= R\ 31\ 635$
- b)  $(R\ 18\ 500 \times 2) - R\ 31\ 635 = R\ 5\ 365$
- c) *Costs for daughter in grade 8* :  $R\ 2000 + R\ 1800 = R\ 3800$   
*Costs for daughter in grade 10*:  $R\ 2000 + R\ 1000 + R\ 1800 = R\ 4800$   
*Total cost of sundries*:  $R\ 3800 + R\ 4800 = R\ 8\ 600$
- d) *Total fees* =  $R\ 18\ 500 + R\ 2000 + R\ 1000 + R\ 1800 = R\ 23\ 300$
- e)  $\frac{R\ 23\ 300}{10\ months} = R\ 2330\ per\ month$
- f)  $R\ 18\ 500 + 8.5\% = R\ 20\ 072.50$  for school fees  
 $(R\ 2000 + R\ 1000 + R\ 1800) + 6\% = R\ 5\ 088$  for sundry expenses  
*Total* =  $R\ 20\ 072.50 + R\ 5\ 088 = R\ 25\ 160.50$
7. a)  $R\ 10.00 + 14\% = R\ 11.40$  in Dec 2011
- b) In 2009, it increased by 6%
- c) The price of chips decreased in 2010.
- d) 21% increase.
- e)  $R\ 10 + 21\% = R\ 12.10$        $3 \times R\ 12.10 = R\ 36.30$

