# Mathematical Literacy 4 - Module 2

Name: .....  Marks Available: 60

Time: 45 minutes

**Question 1:**

*State whether each of the following are arithmetic or geometric patterns:*

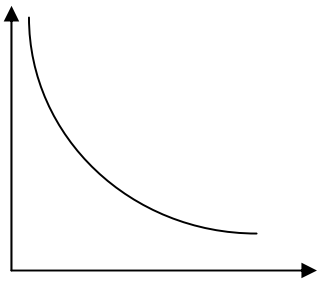
a. If a bus ticket from Johannesburg to Durban costs R500 then two tickets costs R1 000. (**A** / G)
b. I earn interest on R1000 invested at the bank. (A / **G**)
c. The population growth rate of the human race. (A / **G**)
d. The rate of infection during an outbreak of flu. (A / **G**)
e. The founder of Intel Corporation, Gordon Moore, predicted that the speed of computers will double every 18 months. (A / **G**)

[10]

**Question 2:**

*State whether each of the following are a direct or inverse relationship.*

a. The price of petrol vs. the volume that you can buy. (D / **I**)
b. The price of houses vs. the number of houses sold. (D / **I**)
c. y = 5x + 40 (**D** / I)
d. xy = 15 (D / **I**)
e. (D / **I**)



[10]

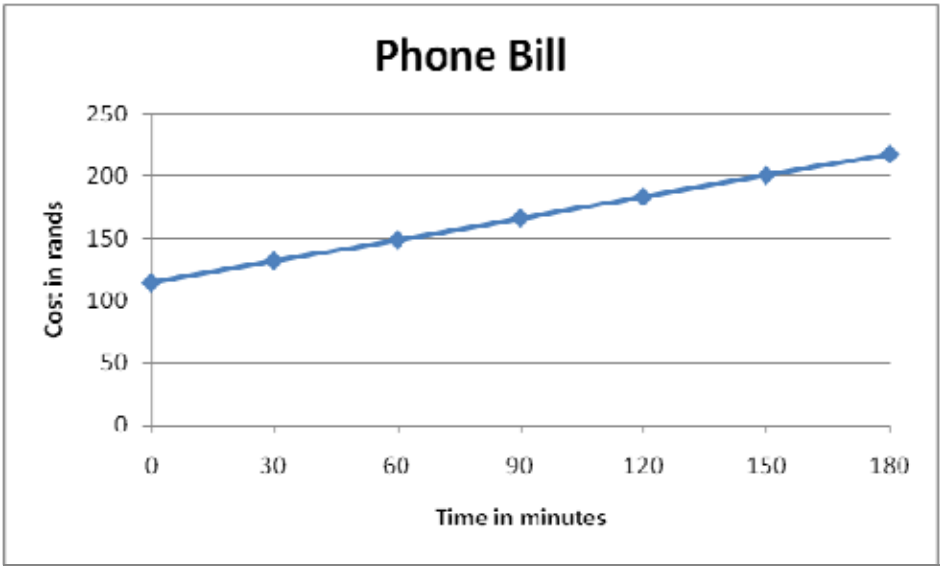
**Question 3:**

A telephone bill is charged at R115 for the line rental and 57c / min for calling.

a. Write the equation for the monthly cost of calls. (2)
   Cost (y) = R115 + 0.57 x no of minutes (x)
b. Complete the table illustrating the total cost per month for the telephone bill. (3)

| Time | 1/2 hour | 1 hour | 1.5 hours | 2 hours | 2.5 hours | 3 hours |
|---|---|---|---|---|---|---|
| Cost | **R132.10** | **R149.20** | **R166.30** | **R183.40** | **R200.50** | **R217.60** |

c. Draw a line graph of this. (5)




[10]

**Question 4:**

*Note: You may want to give students the formulae for these equations.*

a. Calculate the simple interest earned if the principle amount = R30 000; time = 5 years and interest rate = 12% (3)

**SI = P x I x t**

**=30 000 x 0.12 x 5**

**=R18 000**

b. Calculate the Celsius temperature if the Farenheit temperature is 100 (4)

**C = 5/9( F -32)**

**= 37.78°C**

c. How much water is there in a water tanker 10m long with a circumference of 2m.

**Volume** $= \pi r^2 h$

$= \pi(1)^2 10$

$= 31.42 m^3$

d. What is it's estimated surface area? (3)

**SA** **$= \pi r^2(r+h)$**

**$= \pi(1)^2(11)$**

**$=34.56m^2$**

e. How much fencing would be needed to fence a farm 3km long and 3850m wide?

**Perimeter** **= 2 x l + 2 x b**

**= 2(3000) + 2(3850)**

**=R13 700m or 13.7km**

[15]

**Question 5:**

**Latest car sales may signal the end of the downturn.**

*The total new-vehicle market rebounded slightly in September, with sales increasing by 6,1%, compared with figures for August, to reach 35 931 units.*

*Sales of new passenger cars in September showed an increase of 6,2% over sales recorded in August, totalling 23 813 units.*

*September sales in the light commercial vehicle segment increased by 5,5% from August, but the 10 525 units fell 21,9% short of September 2008 sales.*

*The 551 medium commercial vehicles sold were 2% up on last month's results, but 35,8% in the red compared with figures for September last year.*

*Sales in the heavy commercial vehicle segment reached 1 042 units, an increase of 10,4% on August's results, but 48,6% down on the number achieved in September 2008.*

a. Represent the information in a table. (3)

| Passenger Vehicles | Light commercial | Medium commercial | Heavy commercial | Total |
|---|---|---|---|---|
| 23813 | 10525 | 551 | 1042 | 35931 |

b. What do the percentages tell you? (6)

**The percentages tell us how many cars were sold in comparison to last month and the same month last year. This allows us to get a trend of what is happening in the car industry.**

c. Represent the information in a bar graph. (6)