

Mathematical Literacy 2

Hands-On Support

Supplementary homework assignments - Solutions

Module 1

Assignment 1:

Calculate the following with your calculator:

1. $1048 \times 75 =$ 78 600
2. $56 \times 56 =$ 3136
3. $100 + 3\% =$ 103
4. $507 + 8\% =$ 547.56
5. $872 \div 4 =$ 218
6. $6 \times 7 \times 8 \times 9 \times 10 =$ 30 240
7. $256 \div 2 \div 2 \div 2 \div 2 \div 2 \div 2 \div 2 \div 2 =$ 1
8. $3 \times 3 \times 3 \times 3 \times 3 =$ 729
9. $57 \times 104 \div 20 + 3 - 10 =$ 289.4
10. $81 \div 9 \times 16 \div 2 + 5 - 10 =$ 67

Assignment 2:

1. Estimate the following:

- a. $48 \times 52 =$ 2496
- b. $1024 \div 16 =$ 64
- c. $81 \times 59 =$ 4779
- d. $27 \times 63 =$ 1701
- e. $87 \times 61 =$ 5307

2. Round off the following to the specified decimal place:

- a. 31 769 (10) 31 770
- b. 0.9999 (0.001) 1.0000
- c. 536 842 (1000) 537 000
- d. 15 974 310 (1 000 000) 16 000 000
- e. 0.33333 (0.1) 0.3

Assignment 3:

1. Perform the following calculations:

- a. $-5 + 10$ 5
- b. $-7 - 3$ -10
- c. $-8 - (-4)$ -4
- d. $4 - 9$ -5
- e. $5 + (-16)$ -11

2. Convert the following to decimals:

- a. $\frac{5}{10}$ 0.5

- b. $\frac{3}{21}$ 0.1428
- c. $\frac{4}{9}$ 0.4444
- d. $\frac{6}{7}$ 0.857
- e. $\frac{99}{100}$ 0.99
- f. $\frac{100}{150}$ 0.67
- g. $\frac{180}{210}$ 0.857
- h. $\frac{61}{72}$ 0.847
- i. $\frac{72}{80}$ 0.9
- j. $\frac{56}{60}$ 0.933

3. Convert the following to fractions

- a. 0.3 $\frac{3}{10}$
- b. 0.51 $\frac{51}{100}$
- c. 0.52 $\frac{13}{25}$
- d. 0.6 $\frac{3}{5}$
- e. 0.384 $\frac{48}{125}$
- f. 0.625 $\frac{5}{8}$

- g. 0.750
- h. 0.925
- i. 0.684
- j. 1.497

$$\begin{array}{r} 3 \\ 4 \\ \hline 87 \\ 40 \\ \hline 171 \\ 280 \\ \hline 1 \frac{497}{1000} \end{array}$$

Assignment 4

Calculate the following percentages

- | | |
|------------------------|---------|
| a. 0.4 | 40% |
| b. $\frac{7}{10}$ | 70% |
| c. 1.625 | 162.5% |
| d. $\frac{1625}{1000}$ | 162.5% |
| e. 0.976 | 97.6% |
| f. $\frac{4}{9}$ | 44.44% |
| g. $\frac{32}{50}$ | 64% |
| h. $\frac{87}{86}$ | 102.35% |
| i. $\frac{125}{100}$ | 125% |
| j. $\frac{204}{102}$ | 200% |

Assignment 5:

Calculate the following:

- | | |
|------------------|---------|
| a. 65% of R450 | R292.50 |
| b. 28% of R120 | R33.60 |
| c. 14% of R280 | R39.20 |
| d. 10% of R1 200 | R120 |
| e. 75% of R250 | R187.50 |
| f. 33.3% of R600 | R200 |
| g. 45% of R90 | R40.5 |
| h. 67% of R150 | R100.50 |
| i. 71% of R910 | R646.10 |
| j. 85% of R999 | R849.15 |

Activity 6

Do the following conversions

- | | |
|-----------------|-----------|
| a. 230 l → ml | 230 000ml |
| b. 10 400m → km | 10.4km |

- | | |
|-------------------------|------------------------|
| c. 9 876 000 mg → kg | 9.876kg |
| d. 4 560 000 000 mg → t | 4.56t |
| e. 2t → g | 2 000 000g |
| f. 1 hour → sec | 3 600 sec |
| g. 1 day → min | 1 440 min |
| h. 1 year → hours | 8 760 hours |
| i. 5 km / h → m/s | 1.38 m.s ⁻¹ |
| j. 20 m/s → km/h | 72km.h ⁻¹ |

Activity 7

Challenge: Add all the numbers from 1 to 100 (hint there is a shortcut, see if you can find it)

Module 2:

Assignment 1:

List all your household's monthly expenses and categorise them into fixed and variable expenses.

Assignment 2:

Describe how you would go about keeping record of your income and expenses.

- *Salary slips*
- *Receipts*
- *Bank statements*
- *Any other methods*

Assignment 3:

Explain three reasons why you should save for the future.

- *To decrease your financial worries. There is always a chance of losing your job, or being hit by unforeseen medical expenses. A buffer of saving can help you ride out the hard times. As a general good practice it is a good idea to have a couple of months worth of salary available as savings.*
- *Debt trap. The debt trap is when most of your income goes towards paying your debts. The easiest and best way to avoid this is not to get into debt. By saving up to buy the product you want, interest rates work for you and not against you, allowing you to spend much less on the product that you would if you were buying it for credit. Of course, it takes self-discipline not to buy now and pay later.*
- *Retirement. When you reach retirement age, you may stop earning, but that doesn't mean you will stop spending. By saving for retirement, you can ensure you can have the quality of life that you want when you retire.*

Assignment 4:

Describe inflation and try to get information about the inflation rate.

- Inflation is the systematic rise in the price of goods over time. It is, essentially caused by either rising input costs (cost push) or too much money chasing too few goods. To get up-to-date information on inflation, visit www.resbank.co.za and click "online statistical queries" and search for CPI or CPIX.

Assignment 5:

Describe the process of budgeting

- *Actual income and expenses are recorded accurately and then used to plan future income and expenses.*
- *An income statement provides information regarding your earnings of a specified period. This statement indicates your income and expenses and therefore whether you are saving money or working into debt.*
- *Estimated amounts of income and expenditure that you expect to be earning and spending in the future.*
- *A budget is a summary of all your projected earnings and expenses in the immediate future.*
- *A budget assists you to plan to avoid a debt situation which can be very difficult to get out of.*
- *The budget is an essential financial tool which provides both motivation and control.*

Assignment 6:

Describe briefly the 8 financial documents that you will deal with from day-to-day

- *Bank statement – Used to track the money going into and coming out of your bank account. Essential for keeping track of all your expenses.*
- *Deposit slip – used to deposit money into your bank account.*
- *Pay slip – contains details about your pay, such as how much you earned, how much tax was deducted and other deductions such as medical aid.*
- *Quotes – used to tell you the price of a good that you want to purchase. This allows you to make an informed decision.*
- *Utility bill – a monthly bill that is issued on use of water and electricity as well as rates.*
- *Receipt – Issued on receipt of payment. Proof that you have paid and useful for drawing up budgets and accounts.*
- *Cheque – used to pay large amounts of money – has largely been surpassed by credit cards and internet banking.*

Assignment 7

What are the benefits of the National Credit Act?

- Bans negative marketing i.e. where you have to provide “no” answers.
- Will hear your complaints about credit agreements and credit providers
- Hand out penalties to credit providers
- Provide you with information to make informed decisions before entering into credit agreements
- Requires a credit provider to give you a quotation
- Credit providers must show all costs and how much you need to repay before you sign the agreement.
- Credit providers must inform you before they give negative information to a credit bureau.
- Credit bureaus must give you a copy of your credit record on request.

Module 3

Assignment 1:

1. Draw the following:
 - a. Square
 - b. Rectangle
 - c. Triangle
 - d. Circle
 - e. Cube
 - f. Triangular prism
 - g. Cone
 - h. Sphere
2. Illustrate the following on a cube:
 - a. Parallel lines
 - b. Perpendicular lines
 - c. Right angles
3. Illustrate the following on a circle:
 - a. Radius
 - b. Diameter
 - c. Circumference

Assignment 2:

Calculate the following:

1. Perimeter of a rectangle 8 x 8 =32
2. Area of the rectangle above =64
3. Perimeter of the triangle vertical height 8; width 6 =24

Assignment 3:

Calculate for the following circles:

Radius 5cm; Radius 7cm

- a. Circumference =31.42; 43.98 cm
- b. Diameter =10; 14 cm
- c. Area =78.53; 153.94 cm²

Module 4

Assignment 1

Describe four ways of getting information.

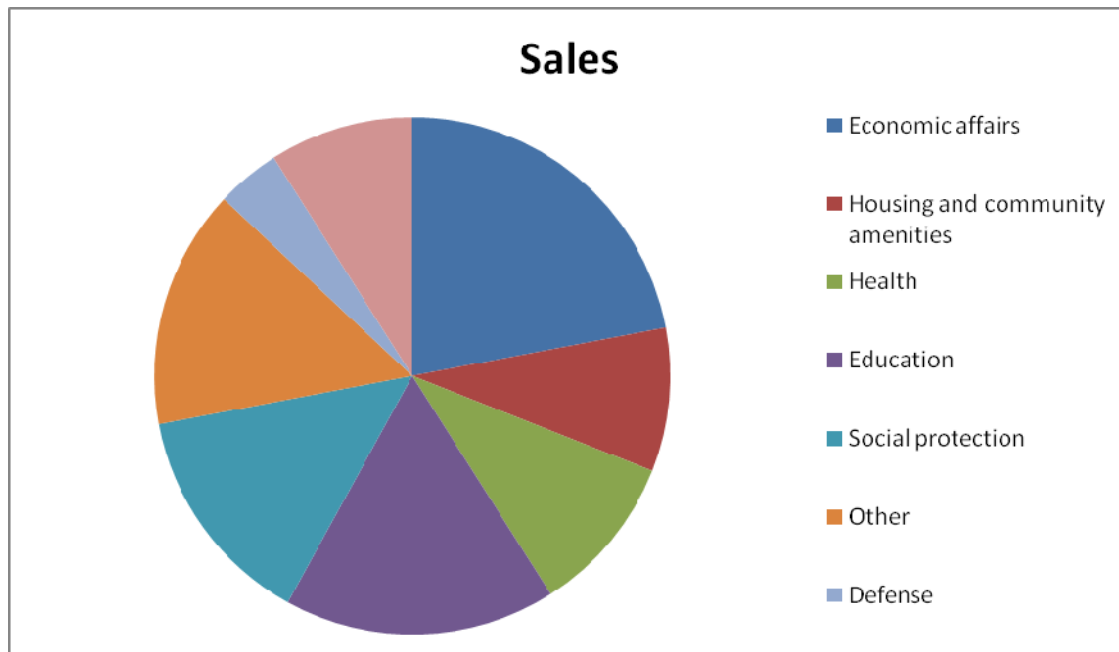
- *Tick or tally lists*
- *Surveys*
- *Questionnaires*
- *Existing databases*

Assignment 2

Draw up a pie chart of the following:

Percentage of national budget spent on various departments

- | | |
|-----------------------------------|-----|
| • Economic affairs | 22% |
| • Housing and community amenities | 9% |
| • Health | 10% |
| • Education | 17% |
| • Social protection | 14% |
| • Other | 15% |
| • Defense | 4% |
| • Public order and safety | 9% |

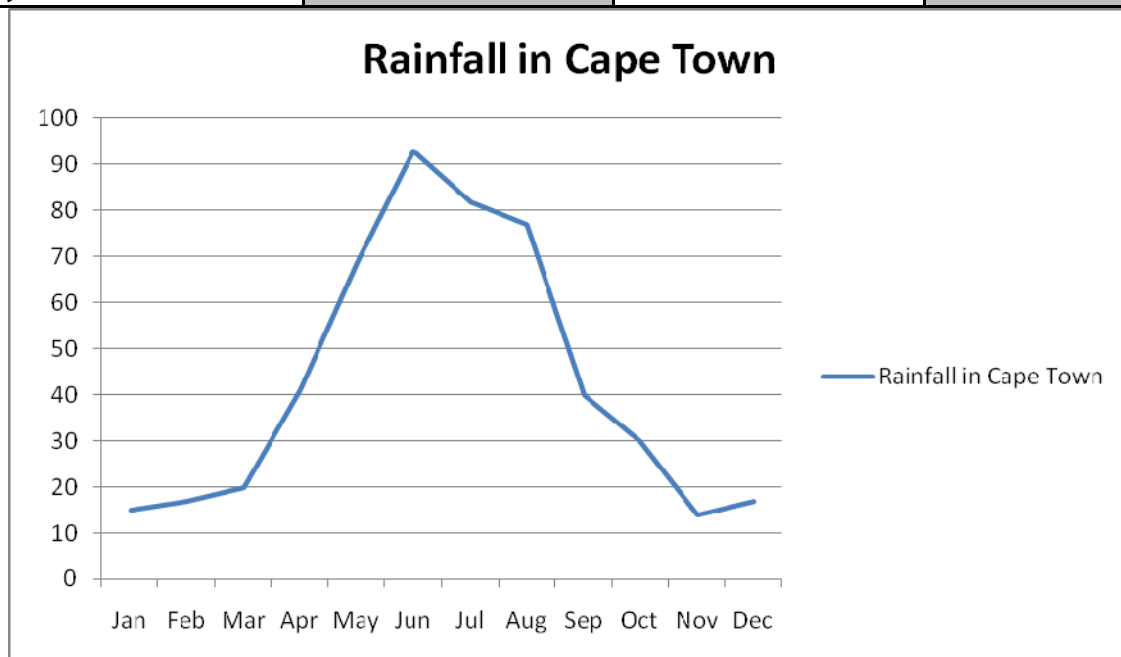


Assignment 3

Draw up a line graph of the following:

Rainfall in Cape Town

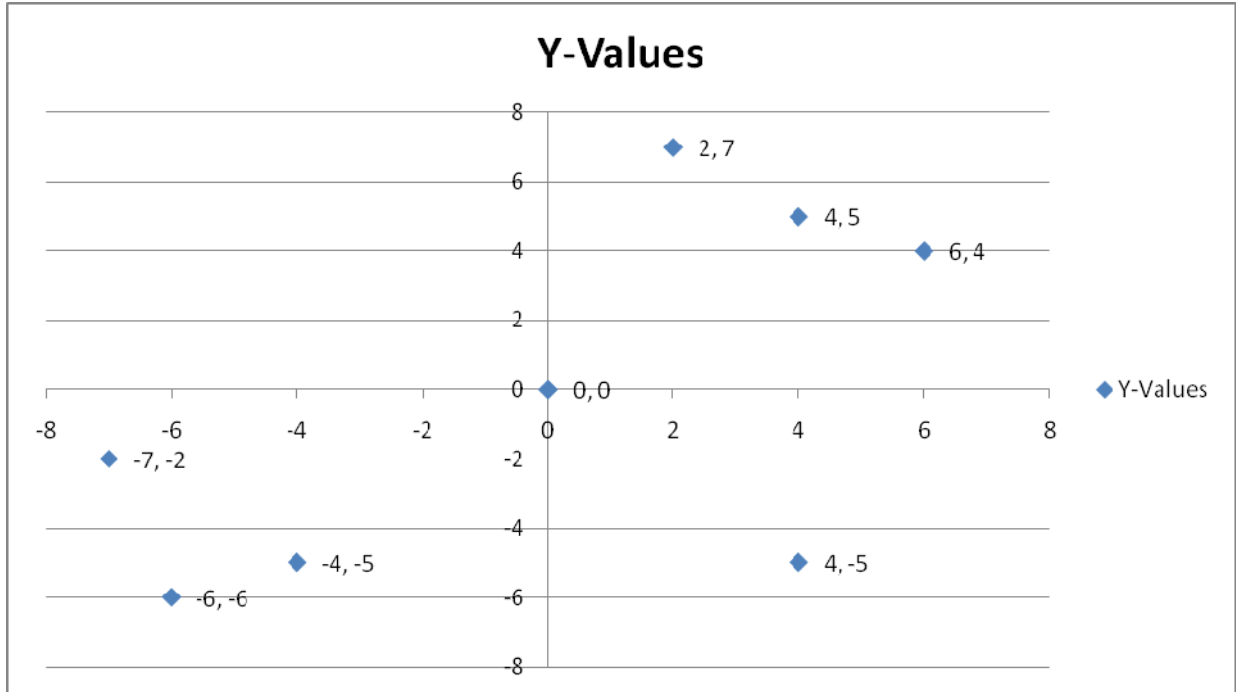
| | | | |
|------------|----|------------|----|
| Jan | 15 | Jul | 82 |
| Feb | 17 | Aug | 77 |
| Mar | 20 | Sep | 40 |
| Apr | 41 | Oct | 30 |
| May | 69 | Nov | 14 |
| Jun | 93 | Dec | 17 |



Assignment 4

Sketch the following points on a set of axes.

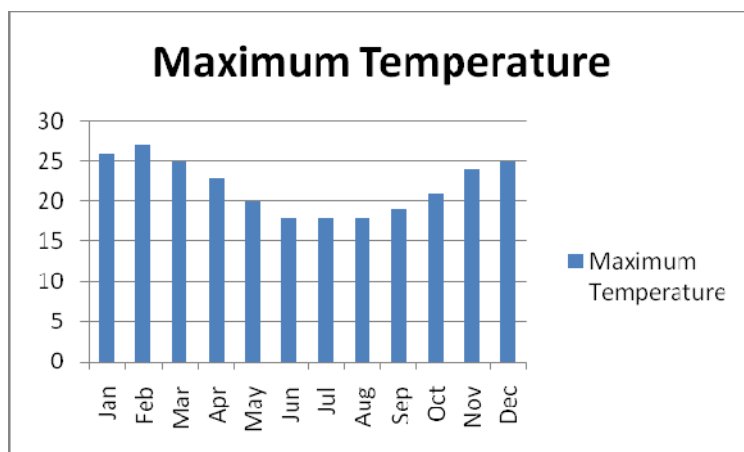
- (0;0)
- (4;5)
- (-4; -5)
- (4; -5)
- (2; 7)
- (-6; -6)
- (-7; -2)
- (6; 4)



Assignment 5

Draw bar graphs of the maximum temperature of Cape Town

| | | | | | |
|------------|----|------------|----|------------|----|
| Jan | 26 | May | 20 | Sep | 19 |
| Feb | 27 | Jun | 18 | Oct | 21 |
| Mar | 25 | Jul | 18 | Nov | 24 |
| Apr | 23 | Aug | 18 | Dec | 25 |



Assignment 6

Calculate the mean, median and mode for the following data:

a. 67; 58; 76; 53; 29; 45; 24; 82; 28; 58

Mean = 52

Median = 55.5

Mode = 58

b. 35; 48; 18; 14; 44; 70; 20; 29; 14; 30

Mean= 32.20

Median= 29.5

Mode= 14

Module 5

Assignment 1

1. Complete the following:

- a. 3; 6; 12; 24;;;; 48; 96; 192; 384
 b. 3; 6; 9; 12;;;; 15; 18; 21; 24
 c. $\frac{1}{2}$; $\frac{1}{4}$; $\frac{1}{8}$;;;; $\frac{1}{16}$; $\frac{1}{32}$; $\frac{1}{64}$; $\frac{1}{128}$
 d. 7; 14; 21;;;; 28; 35; 42; 49
 e. 9; 17; 25;;;; 33; 41; 49; 57

2. Calculate the accumulated interest on R1000 at 10% per annum over 10 years. At what point did you double the original amount? How long will it take to double if the interest rate is 20%? *After 7 years; between 3-4 years*

Assignment 2

Complete the following tables:

| | | | | | |
|---|----|----|-----------|-----------|-----------|
| 5 | 6 | 7 | 8 | 9 | 10 |
| 7 | 10 | 13 | 16 | 19 | 22 |

| | | | | | |
|---|----|----|-----------|-----------|-----------|
| 4 | 8 | 12 | 16 | 20 | 24 |
| 9 | 10 | 11 | 12 | 13 | 14 |

| | | | | | |
|----|----|----|-----------|-----------|-----------|
| 6 | 7 | 8 | 9 | 10 | 11 |
| 32 | 37 | 42 | 47 | 52 | 57 |

| | | | | | |
|---|----|----|-----------|-----------|------------|
| 1 | 3 | 5 | 7 | 9 | 11 |
| 0 | 20 | 40 | 60 | 80 | 100 |

Assignment 3

Work out the equation of each of the following:

| | | | |
|---|----|----|----|
| 3 | 4 | 5 | 6 |
| 9 | 12 | 15 | 18 |

$$Y = 3x$$

| | | | |
|----|----|----|----|
| 4 | 7 | 10 | 13 |
| 18 | 33 | 48 | 63 |

$$Y = 5x - 2$$

| | | | |
|-----|---|-----|-----|
| 1 | 2 | 3 | 4 |
| 5.5 | 6 | 6.5 | 7.0 |

$$Y = \frac{1}{2}x + 5$$

| | | | |
|---|---|---|----|
| 5 | 7 | 9 | 11 |
| 3 | 5 | 7 | 9 |

$$Y = x - 2$$

| | | | |
|---|----|----|----|
| 5 | 10 | 15 | 20 |
| 2 | 2 | 2 | 2 |

$$Y = 2$$