**Province of the**
# EASTERN CAPE
EDUCATION

## NATIONAL
## SENIOR CERTIFICATE

## GRADE 12

## JUNE 2018

## MATHEMATICAL LITERACY P1

**MARKS: 100**

**TIME: 2 hours**

*JMLITE1*

This question paper consists of 10 pages including an answer sheet and an addendum with 1 annexure (2 pages).

**INSTRUCTIONS AND INFORMATION**

1.      This question paper consists of FIVE questions. Answer ALL the questions.

2.      2.1     Use the ADDENDUM with ANNEXURE A for QUESTION 5.

        2.2     Use the ANSWER SHEET for QUESTION 2.3.3.
                Write your GRADE and YOUR NAME in the spaces provided on the ANSWER
                SHEET.  Hand in the ANSWER SHEET with your ANSWER BOOK.

3.      Number the answers correctly according to the numbering system used in this question
        paper.

4.      Diagrams are not necessarily drawn to scale.

5.      Round off ALL the final answers according to the context used, unless stated otherwise.

6.      Indicate units of measurement, where applicable.

7.      Start EACH question on a NEW page.

8.      Show ALL calculations clearly.

9.      Write neatly and legibly.

**QUESTION 1**

1.1 Jane has a savings account with ABA Bank. Use the information shown in TABLE 1 below that applies to her account to answer the questions that follow.

**TABLE 1: COSTS OF SAVINGS ACCOUNT AT ABA BANK**

| TRANSACTION | COSTS |
|---|---|
| Deposit | R1,50 + 0,25% of the amount deposited |
| Withdrawal | R2,00 + 0,5% of the amount withdrawn |

1.1.1 Calculate the cost she will be charged to deposit R2 000. (2)

1.1.2 Write down the minimum cost for any withdrawal transaction. (2)

1.2 Jane has a cellphone on a pre-paid arrangement with a network that provides 1 GB (Gigabyte) data at a cost of R149.

**NOTE: 1 GB = 1 000 MB (Megabytes)**

TABLE 2 below shows a list of applications that Jane updated in a month – May 2018.

**TABLE 2: APPLICATIONS UPDATED**

| APPLICATIONS UPDATED | DATA PURCHASED ON NETWORK (MB) |
|---|---|
|  |  |
| Google Drive | 23,45 |
| Dropbox | **A** |
| Facebook | 90 |
| Messages | 23 |
| You Tube | 45 |
| **TOTAL DATA** | **231,70** |

Use TABLE 2 above to answer the questions that follow.

1.2.1 Determine the value of **A**, the data purchased for updating Dropbox. (2)

1.2.2 Calculate the cost of the total data used in updating the above applications. (2)

1.3    Study the following boarding pass issued by NICE TRAVEL AIRWAYS and answer the questions that follow.

| NICE TRAVEL AIRWAYS | | | |
|---|---|---|---|
| Passenger: Mr K. Jabulani | | | |
| **FLIGHT DETAILS** | | **FROM** | **TO** |
| SA 476 | Seat 20B | East London | Johannesburg – O.R. Tambo International Airport |
| Boarding time | 11:35 | 08 November 2017 | |
| Departure time | 12:05 | | Arrival time 13:30 08 November 2017 |
| Class of Travel: Economy Class | | Booking reference: JM74STV | |
| | | TICKET:  82347 1120983 01 | |
| Have a nice flight! | | | |
| | | | |

[Adapted from SAA ticket]

    1.3.1    Identify Mr Jabulani's seat number.                                   (2)

    1.3.2    Calculate the duration (time) for the flight from East London to Johannesburg.    (2)

1.4    1.4.1    Write down TWO types of scales used on maps.                       (2)

    1.4.2    Explain the meaning of scale 1 : 400 000.                           (2)

1.5    In 2017 a report about qualifications indicated that 2 100 000 adults aged 20 years and above attained a tertiary qualification at a South African university.
Use TABLE 3 below to answer the questions that follow.

    **TABLE 3:     ADULTS 20 YEARS AND OLDER, WITH TERTIARY QUALIFICATIONS**

| **FIELD** | **NUMBER OF ADULTS** |
|---|---|
| Education | 503 096 |
| Business Studies | 439 719 |
| Health | 221 121 |
| Engineering | 219 007 |
| Other fields | ------- |
| | |

    1.5.1    Determine the number of adults in 'other fields'.                     (2)

    1.5.2    Express the number of adults who obtained a qualification in the field of health as a percentage of the total number of adults.                     (2)

**[20]**

**QUESTION 2**

2.1    The table below shows the cost of a basket of goods in 2017 and an identical basket in 2018.

**TABLE 4: BASKET PRICE IN 2017 AND IN 2018**

| YEAR | 2017 | 2018 |
|---|---|---|
| Basket Price | R343,00 | R369,50 |
| Inflation rate (%) | | **E** |

Calculate the value of **E** (inflation rate of 2018).

You may use the following formula:

$$\textbf{Inflation rate} = \frac{\textbf{2018 Price} - \textbf{2017 Price}}{\textbf{2017 Price}} \times \textbf{100\%}$$      (3)

2.2    Mr Abudalla works as an accountant at a firm in the Eastern Cape. His salary was increased by 8,5% and he now earns R25 750 a month.

     2.2.1    Calculate his salary before the 8,5% increase.      (3)

     2.2.2    Calculate his annual salary after the increase.      (2)

2.3    Mr Abudalla rents a hall on a private farm at a fixed cost of R3 600 per function. He in turn hires out the hall and charges R50 per person (per ticket).

Use the table below that shows his income from the sale of tickets, to answer the questions that follow:

| Number of tickets sold | 0 | 10 | **D** | 100 |
|---|---|---|---|---|
| Amount received (Income) | 0 | 500 | 2 500 | 5 000 |

     2.3.1    Calculate the value of **D**.      (2)

     2.3.2    Determine the cost Mr Abudalla will have to pay if the hall is rented out to 120 people.      (2)

     2.3.3    The income graph has been drawn on the attached ANSWER SHEET. Draw the cost graph for renting the hall on the same grid as the income graph on the ANSWER SHEET.      (2)

     2.3.4    Use your graph, or otherwise, to determine the difference between income and the cost of renting for a function of 60 people. Indicate whether it is a profit or loss.      (3)

     2.3.5    Explain the meaning of *break-even point* in this context.      (2)

2.4    The cost of renting the hall includes Value Added Tax (VAT 15%). Calculate the VAT amount.      (3)

    

2.5    2.5.1    Mr Abudalla received 1 250 Chinese Yuan (CNY) from his son working in China. Convert the amount received to Rands.

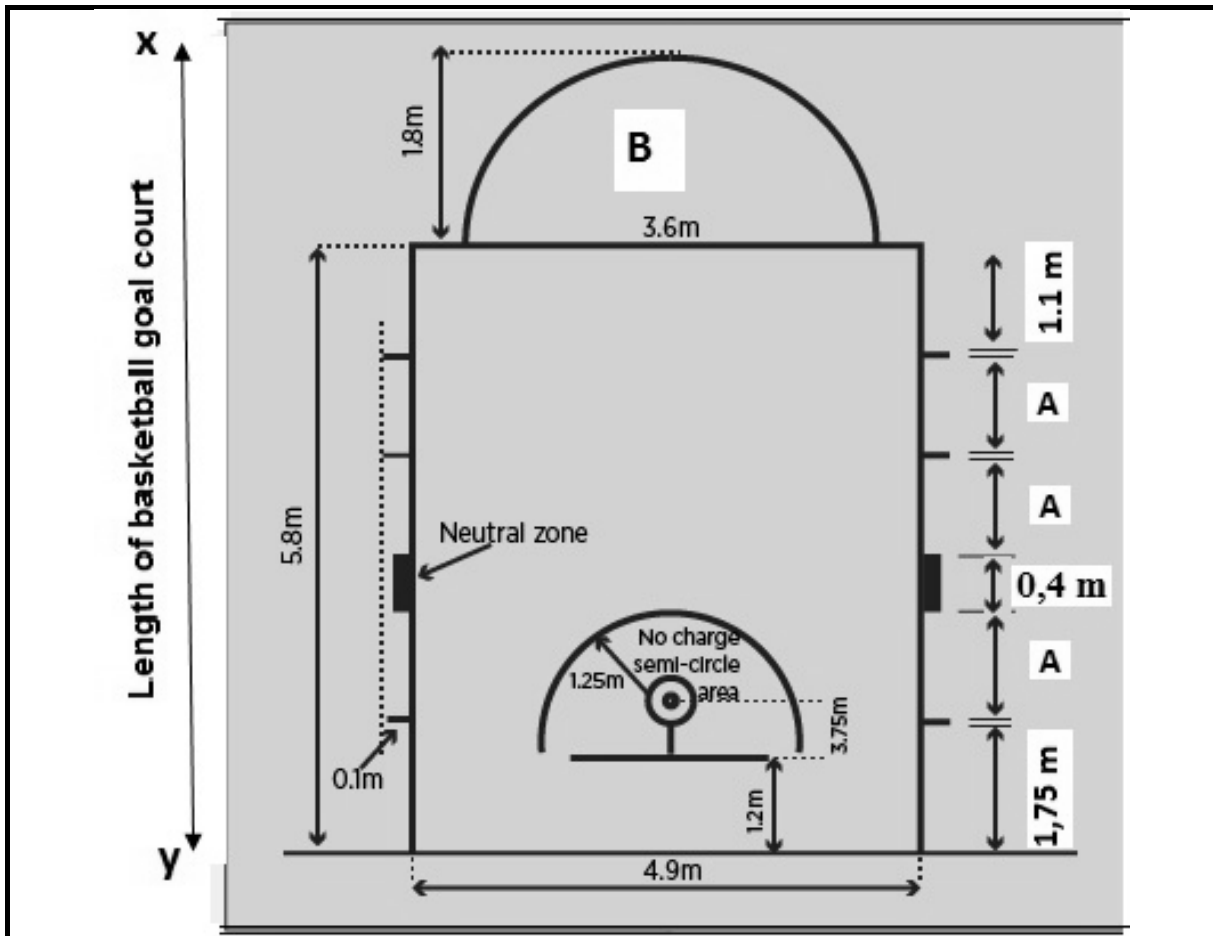**Use the exchange rate of R1 = 0,46406 CYN**          (2)

2.5.2    Mr Abudalla shared the money received from his son with his wife in the ratio 2 : 3.
Calculate how much more his wife received than him.          (3)

**[27]**

**QUESTION 3**

A basketball court has two basketball goal areas. Study the diagram of ONE of the basketball goal areas in a basketball court and answer the questions that follow.



3.1    Write down the radius of the part marked **B**.                                                    (2)

3.2    Determine the circumference of the semi-circle part marked **B** in the basketball goal area.

You may use the following formula:
$$Circumference\ (C) = \pi \times radius\ (r)\quad OR$$
$$C = \pi \times diameter \div 2$$
(Use $\pi = 3,142$)                                                                                           (2)

3.3    Calculate the distance marked **A**.                                                              (4)

3.4    Calculate the total area covered by the basketball goal areas of the basketball court. Round off your final answer to the nearest square meter (m²).
You may use the following formula:
$$Total\ Area = \pi \times (radius)^2 + (length\ x\ breadth) \times 2$$                                   (5)

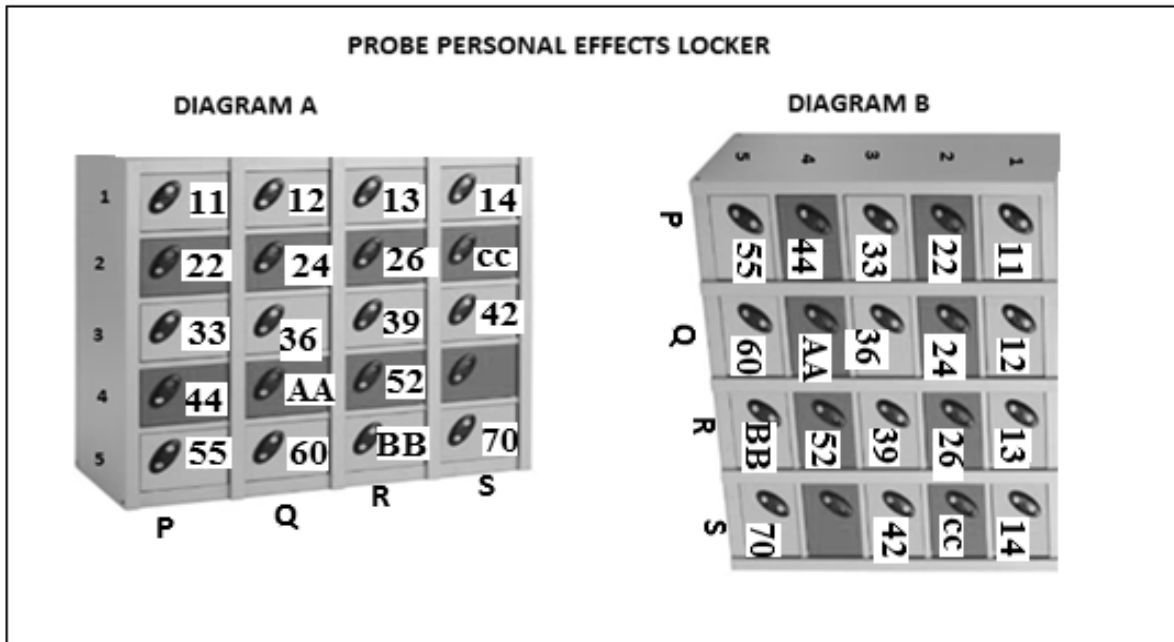3.5    Show with a calculation that the length covered by ONE basketball goal area of a basketball court is 15,2 m.                                                                            (3)

                                                                                                          **[16]**

**QUESTION 4**

Study the Probe Personal Effects Locker from a soccer team's changing rooms below and answer the questions that follow.

**NOTE**:      The two diagrams below, DIAGRAM A and DIAGRAM B, represent the same locker but in different positions.



[Source:  Adapted from www.3dlockers.co.uk]

4.1    Write down the number of numerically marked lockers.                    (2)

4.2    Assign locker numbers to the lockers marked by the following letters in the diagram:

    (a)    AA                                                            (2)

    (b)    BB                                                            (2)

4.3    Write down the grid reference for locker 60 in DIAGRAM A.                    (2)

4.4    Nelly moved the locker from the upright position shown in DIAGRAM A to the one in DIAGRAM B. Explain in your own words how she turned the locker to the position shown in DIAGRAM B.                                        (3)

                                                                       **[11]**

**QUESTION 5**

The weather maps displayed in ANNEXURE A show the maximum temperatures for
towns and cities in KwaZulu-Natal and the Eastern Cape on the same day.
Use ANNEXURE A to answer the following questions.

5.1   5.1.1   Write down the number of data values displayed by the two weather maps.   (2)

      5.1.2   Write down the names of the towns and cities with a temperature of 17 °C.   (4)

      5.1.3   Arrange the Eastern Cape temperatures in ascending order.   (2)

      5.1.4   Write down the median of the Eastern Cape's temperatures.   (2)

      5.1.5   Determine the value of the interquartile range for the Eastern Cape.   (4)

      5.1.6   Calculate the mean of the KwaZulu-Natal temperatures.   (3)

      5.1.7   Write down the modal temperature for KwaZulu-Natal.   (2)

      5.1.8   Calculate the difference between the highest KwaZulu-Natal temperature and
              the highest Eastern Cape temperature.   (2)

5.2   5.2.1   Write down the meaning of the term *probability*.   (2)

      5.2.2   Determine the probability of choosing a town from the two provinces with a
              temperature reading that is less than 17 °C.   (3)

                                                                              **[26]**

                                                              **TOTAL:**   **100**

**ANSWER SHEET FOR QUESTION 2.3.3**

**NAME OF LEARNER:**  _____

**GRADE 12:**                _____

### Income and Cost graph