Basic Education

KwaZulu-Natal Department of Basic Education
REPUBLIC OF SOUTH AFRICA

MATHEMATICAL LITERACY P2

COMMON TEST

JUNE 2016

NATIONAL SENIOR CERTIFICATE

GRADE 10

MARKS: 50

TIME: 1 hour

This question paper consists of 6 pages, 1 Annexure and 1 Answer sheet.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **THREE** questions. Answer ALL the questions.
2. Use Annexure A to answer Question 1 and the ANSWER SHEET provided to draw the graph for QUESTION 1.1.5 (b).

   Write your name and grade on the space provided on the ANSWER SHEET.
3. Number the answers correctly according to the numbering sytem used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL the calculations clearly.
7. Round ALL the final answers off to TWO decimal places, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Write neatly and legibly.

QUESTION 1

1.1 Vaughn is a ABC bank customer. He received the new fee structure effective from 1 March 2016.

Use the fee structure Annexure A to answer the following questions.

1.1.1 Write down how much it will cost to withdraw R500 from a supermarket till point. (2)

1.1.2 Calculate the amount Vaughn paid for administration fees in 2015. (2)

1.1.3 Determine the percentage increase in fees for withdrawing money from ABC Bank ATM in 2016 compare to 2015. You may use the formula:

$$\textbf{Increase in fees} = \frac{\textbf{2015 fee} - \textbf{2016 fee}}{\textbf{2015 fee}} \times \textbf{100\%}$$ (4)

1.1.4 State TWO valid reason why Vaughn may draw money from another bank's ATM when it cost more than using his own bank's ATM. (4)

1.1.5 Vaughn has to pay a fee to deposit money into his bank account.

(a) Explain why the equation to deposit money into a bank account is:

$$\textbf{Cost (in rand)} = \frac{\textbf{n}}{\textbf{100}} \times \textbf{1,70}$$ (2)

(b) Use the axis provided on ANSWER SHEET 1 to draw a graph to illustrate the cost of depositing money into a bank. (4)

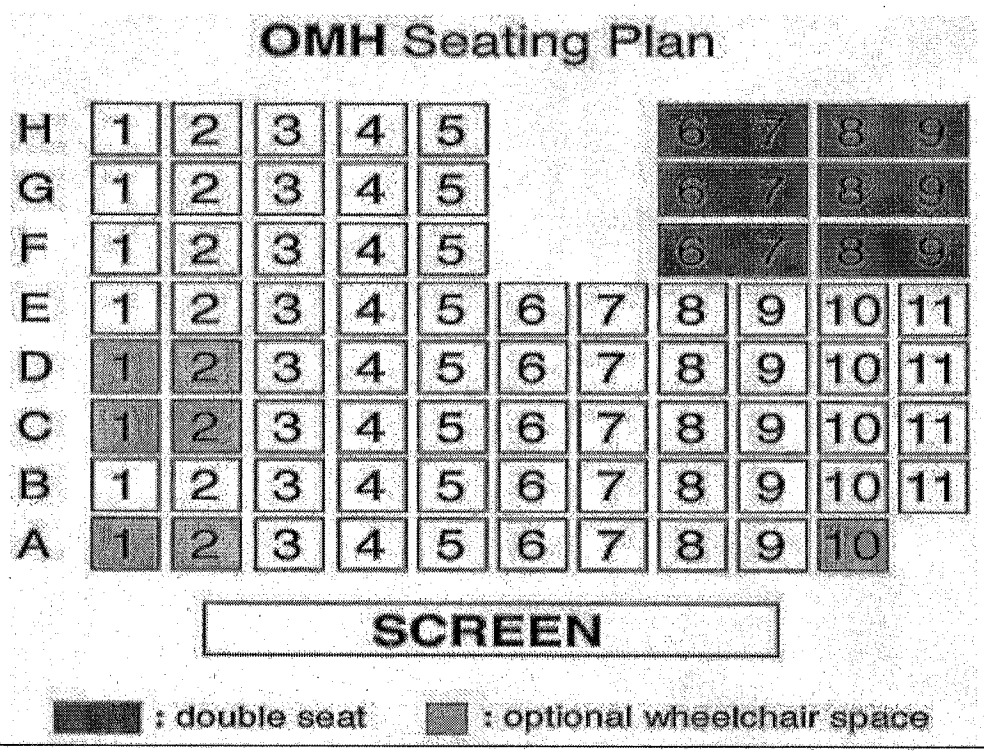
(c) Give one valid reason why it cost money to deposit money into a bank account. (2)

1.2 Vaughn entered the bank at 11:54 and spent 39 minutes in the bank and then drove home. He arrived home at 13:30.
Calculate how long the journey home took. (4)

[24]

QUESTION 2

2.1 Bongiwe and Bongani decided to go to the cinema to see a movie.
The seating plan of the OMH cinema is given below



Study the seating plan and answer the questions that follow.

2.1.1 Determine the maximum number of people that can be seated in the cinema. (2)

2.1.2 Write down the ratio

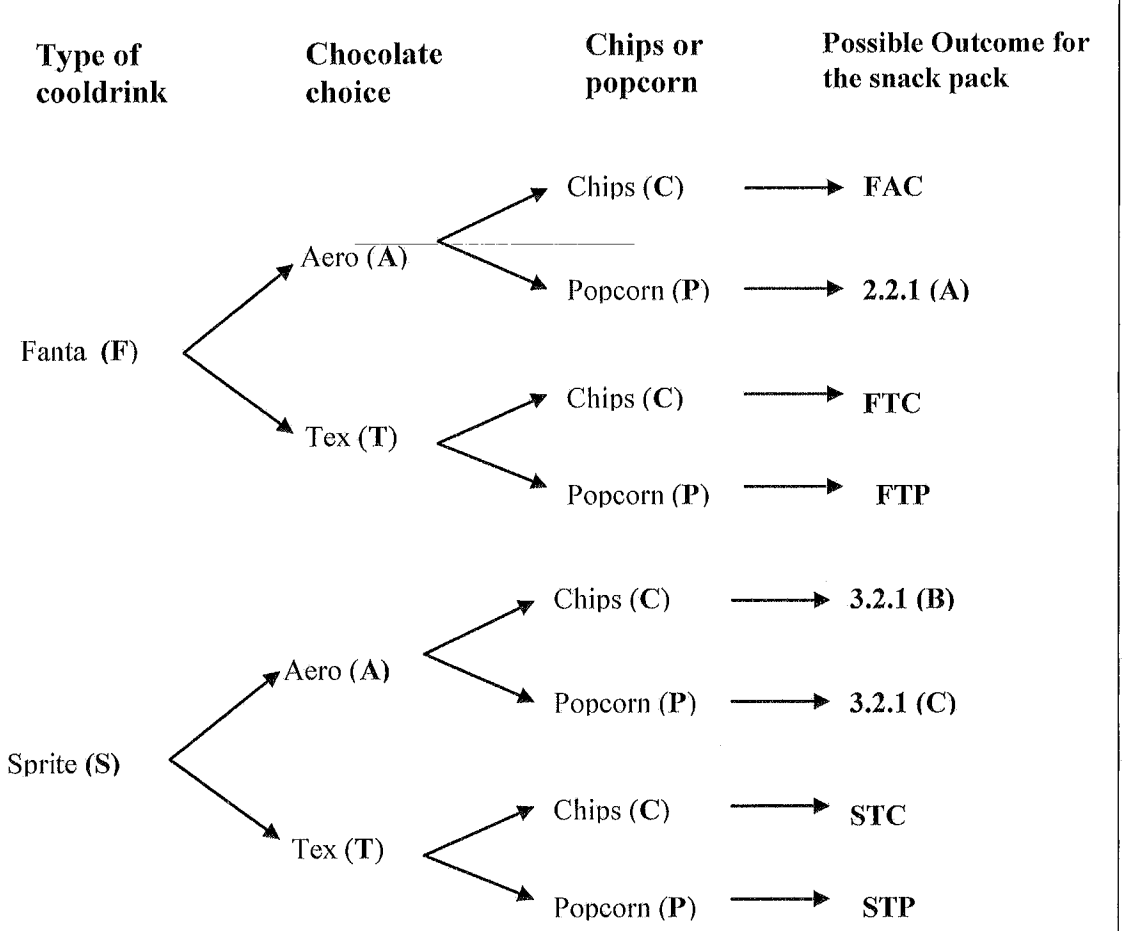
number of wheel chair spaces : total number of seats, in the form 1 : ..... (3)

2.1.3 State one valid reason why there are double seats in the cinema. (2)

2.2 The cinema offers a combi snack pack consisting of a cooldrink, chocolate and either chips or popcorn.

The tree diagram below indicates the possible choices of the snack pack

TREE DIAGRAM: POSSIBLE CHOICE OF SNACK PACK



Study the tree diagram and answer the questions that follow:

2.2.1 Write down the possible outcome A, B and C. (3)

2.2.2 Determine the probability of selecting a snackpack with fanta as the cooldrink in a simplified form. (2)

2.2.3 Determine the probabilty of selecting this snackpack with coke as the cooldrink.. (2)

[14]

QUESTION 3

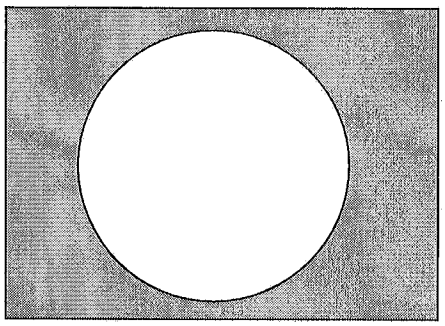
The gardener at a school decided to create a circular garden in the a rectangular grass patch in front of the office. The original dimensions of the grass patch was:

- Length = 20 m and
- Breadth = 15 m

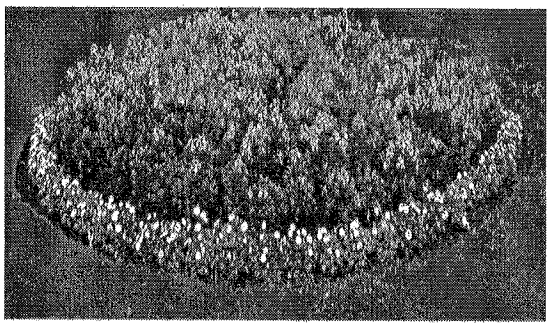
The length of the diameter of the flower garden is 12 m.

He intended growing a hedge of flowers on the circumference of the garden.

Sketch of the garden:



Picture of a circular garden



3.1 Calculate the circumference of the garden .

You may use the following formula:

Circumference of a circle = 2 × π × radius using **π = 3,142.** (4)

3.2 Calculate the area (in m^2) of the circular garden.

Use the formula: **Area of circle = π × (radius)^2** using **π = 3,142.** (3)

3.3 Calculate the area of the remain grass on the field.
Round off your answer to one decimal place.

Use the formula: **Area of a rectangle = length × breadth**

(5)
[12]

TOTAL: **[50]**

ANNEXURE A

QUESTION 1.1

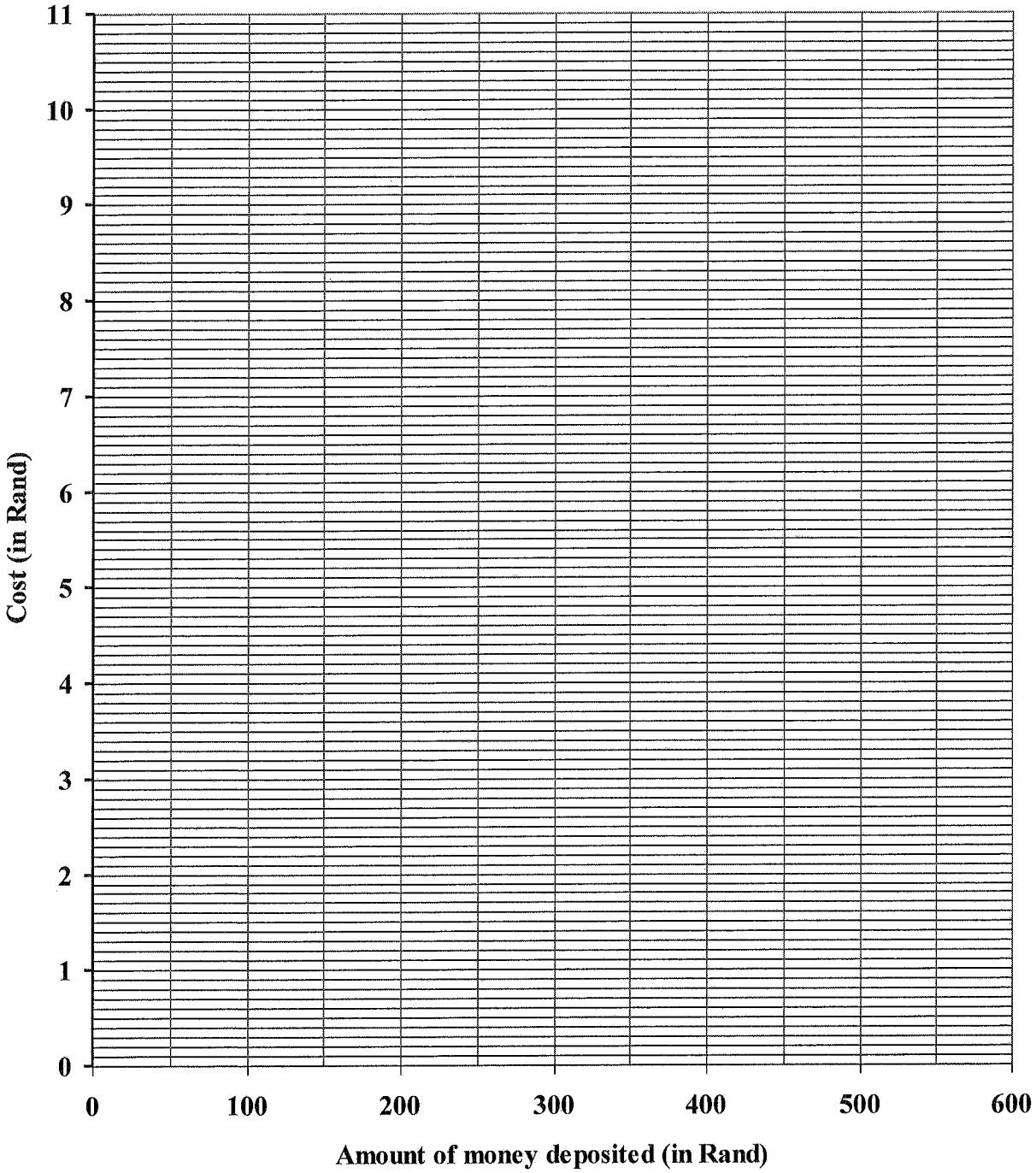
ABC BANK FEE STRUCTURE FOR 2015 AND 2016

TRANSACTION TYPE	**2015 FEE**	**2016 FEE**
Adminstration fee	.....	R5,25 *(25c increase)*
Minimum account balance	R25,00	R25,00
CASH WITHDRAWAL		
Pnp/ Shoprite/ Checkers/ Boxer till points (Fixed)	R1,25	R1,30
ABC Bank ATM	R5,50	R6,00
Other Bank ATM's	R8,00	--------*(50c increase)*
DEPOSITS		
Notes (ATM)	70c per 100	80c per 100
Coins (ATM)	R1,40 per R100	R1,70 per R100
Notes/Coins (branch)	R1,40 per R100	R1,70 per R100
Special clearance cheque	R80,00	R90,00
TRANSFERS, PAYMENTS/PURCHASES		
Debit orders	R3,20	R3,20
Transfer (branch)	----------	R3,60 *(20 c increase)*
Transfer(ATM)	FREE	FREE
Purchase at local/international machines	FREE	FREE

ANSWER SHEET 1 **Name of learner:** _____ **Grade:** _____

Question 1.1.5 (b)

COST OF DEPOSITING MONEY INTO THE BANK



TEAR-OFF SHEET

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MEMORANDUM

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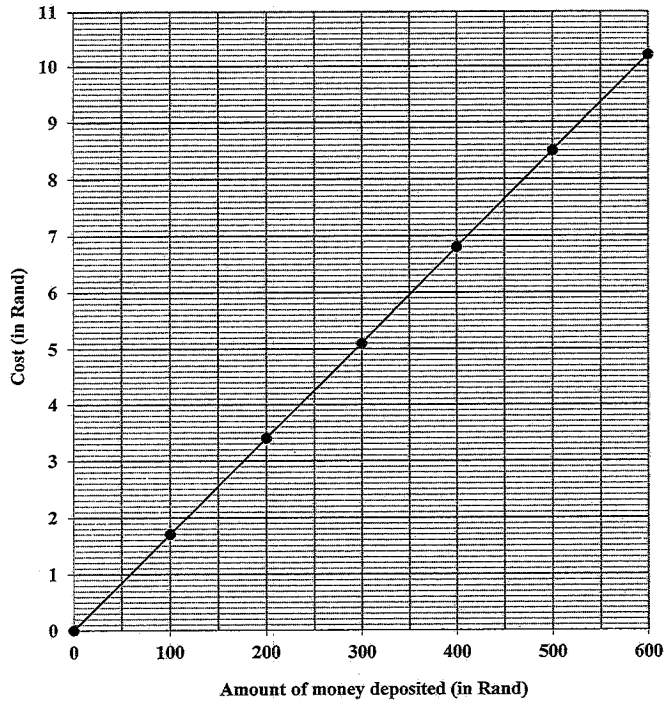
Codes	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
J	Justification/Reason/Explain
SF	Substitution into a given formula
S	Simplification
RD	Reading from a table OR a graph OR a diagram OR a map OR a plan
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding Off
NP	No penalty for rounding OR omitting units

This memorandum consists of 6 pages.

QUESTION 1 [24]			
Ques	**Solution**	**Explanation**	**Level**
1.1.1	R1,30 ✓✓A	2A answer only (2)	L2
1.1.2	Admin fee (2015) = R5,25 − R0,25 ✓M = R5,00 ✓A	1M for subtraction 1A answer **Answer only full marks** (2)	L2
1.1.3	**Increase in fees** = $\frac{\text{2016 fee} - \text{2015 fee}}{\text{2015 fee}} \times 100\%$ ✓M = $\frac{\text{R5,50} - \text{R5,00}}{\text{R5,00}} \times 100\%$ ✓A = $\frac{\text{R0,50}}{\text{R5,00}} \times 100\%$ ✓A = 10% ✓CA	1M substitution 1A correct values 1A simplification 1CA answer **Answer only full marks** (4)	L3
1.1.4	Own bank ATM offline (not working) ✓✓O **OR** In an emergency ✓✓O **OR** Too far/costly to travel ✓✓O **OR** Any valid reason	2O opinion 2O opinion (4)	L4
1.1.5 (a)	✓A ✓A It cost R1,70 per R100 deposited into the bank	1A using R1,70 1A explaining per R100 (2)	L4

Ques	Solution	Explanation	Level
1.1.5 (b)	**COST OF DEPOSITING MONEY INTO THE BANK**  1A starting at (0 ; 0) 2A any three other correct points plotted 1CA joining the points	(4)	L3
1.1.5 (c)	To pay the workers ✓✓O (Any other valid reason)	2A answer (2)	L4

Ques	Solution	Explanation	Level
1.2	Time difference between 11:54 and 13:30 ✓M = 1h and 36 minutes ✓A Time spent in bank = 39 min Time to travel home = 1h and 36 min – 39 min ✓M = 57 min ✓ CA	1M difference 1A simplification 1M subtracting 39 min 1CA answer (4)	L4
		[24]	

QUESTION 2 [14]				
Ques	**Solution**	**Explanation**	**Level**	
2.1.1	Number of people $= 10 + 4 \times 11 + 3 \times 9$ ✓MA $= 10 + 44 + 27$ $= 81$ ✓CA	1MA adding correct values 1CA (2)	L2	
2.1.2	✓A 7 : 74 ✓M $= 1 : 10,6$ ✓CA	1A for using 7 1M Ratio 1A solution **NP** (3)	L3	
2.1.3	Dating/engaged/married couples may want ot sit close to each other ✓✓O	2O opinion (2)	L4	
2.2.1	**A** = FAP ✓A **B** = SAC ✓A **C** = SAP ✓A	1A for **A** 1A for **B** 1A for **C** (3)	L2	
2.2.2	P (Fanta) $= \frac{4}{8}$ ✓A $= \frac{1}{2}$ ✓CA	1A probability 1CA simplification (2)	L3	
2.2.3	P(coke) = 0 **OR** zero ✓✓A	2A answer (2)	L3	
		[14]		

QUESTION 3 [12]				
Ques	**Solution**	**Explanation**	**Level**	
3.1	Circumference $= 2 \times 3,142 \times 6$ m ✓SF ✓A ✓A $= 37,704$ m ✓A	1SF substitution 1A radius 1A solution 1A unit (4)	L3	
3.2	Area of circle $= 3,142 \times (6 \text{ m})^2$ ✓SF ✓CA $= 113,112 \text{ m}^2$ ✓A	1SF substitution 1CA solution 1A unit (3)	L3	
3.3	Area of rectangle = length × breadth $= 20 \text{ m} \times 15 \text{ m}$ ✓SF $= 300 \text{ m}^2$ ✓A Area of remaining grass $= 300 \text{ m}^2 - 113,112 \text{ m}^2$ ✓M $= 186,888 \text{ m}^2$ ✓CA $= 186,9 \text{ m}^2$ ✓R	1SF substitution 1A solution 1M subtraction 1CA simplification 1R rounding (5)	L2 L4	
		[12]		

TOTAL: 50