

KZN DEPARTMENT OF EDUCATION
PINETOWN DISTRICT

GRADE 10

MATHEMATICAL LITERACY PAPER 1

NOVEMBER EXAMINATIONS

2017

MARKS

: 75

DURATION : 1 ½ HOURS

INSTRUCTIONS & INFORMATION

- This paper consists of **5 QUESTIONS AND 9 PRINTED PAGES** **(INCLUDING ANNEXURES A and B)**
- All calculations and steps must be shown clearly in ink.
- Number the answers correctly according to the numbering system used in this question paper.
- Round off **ALL** final answers appropriately according to the given context unless stated otherwise.
- An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
- Units of measurement must be indicated where applicable.
- Write neatly and legibly.

QUESTION ONE (12 MARKS)

- 1.1. VAT is a taxation used in South Africa. State what it stands for (2)
- 1.2. What is the rate(percentage) of VAT in South Africa? (2)
- 1.3. Hire purchase is a form of loan agreement. State one advantage and one disadvantage of buying goods on hire purchase. (2)
- 1.4. Explain what the ratio 1:20 (represented on a map) means. (2)
- 1.5. Select the the correct answer from the given options: 1735cm =
- A) 173.5 m
 - B) 17.35m
 - C) 1735m
 - D) 1.735m (2)
- 1.6. A survey is one method by which data can be collected. Name another method by which data can be collected. (2)

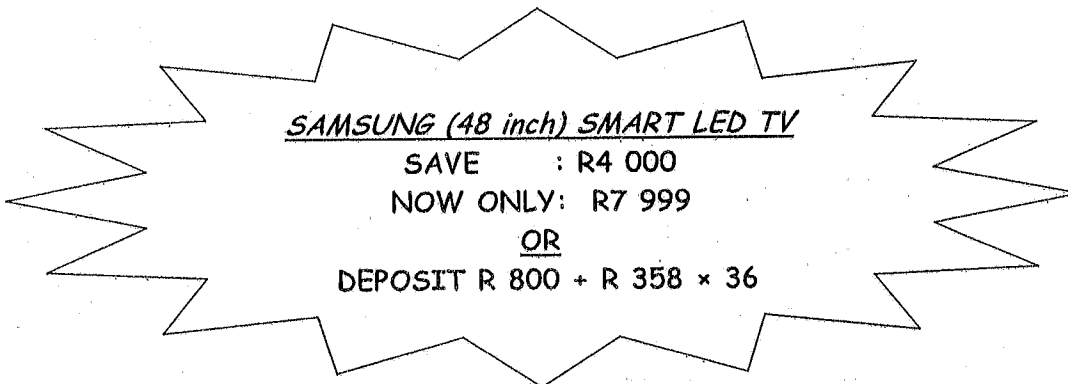
QUESTION TWO (22 MARKS)

Miss Jones is an educator at Sunshine Secondary School. She purchased a few items for the schools market day that is being held to raise funds for the school.

2.1. Study the till slip of Miss Jones shown below and answer the questions that follow:

Pick n Pay		
<u>VERULAM</u> 032 533 3670		
<u>CASHIER : XOLI ZWENI</u>		
CLOVER FULL CREAM MILK 2L		26.99#
VALPRE STILL WATER 1.5L		13.49
CHOPPED TOMATOES		6.99
PNP HOT DOG ROLLS 6'S		10.00
PNP RED PEPPERS		10.32#
PNP POTATOES MED pk		9.11#
WHEATSWORTH 200g		23.99
CRYSTAL BALLPEN RED		14.99
PNP MINI DOUGNUT 2'S		7.98
LARGE CARRIER BAG		0.60
LAYS SPRING ONION		16.99
DUE VAT INCL		141.45
-----TENDER-----		
CASH		200.00
ROUNDING		0.05
CHANGE		58.60
TOTAL ITEMS		11
-----TAX INVOICE-----		
	TAXABLE VAL	VAT VAL
VAT INCL	95.03	11.67
# ZERO RATED	46.42	0.00
-----VAT REG NO. 4190185399-----		
	19/09/17	15 : 26
PLEASE RETAIN AS YOUR GUARANTEE		
CUSTOMER CARE LINE : 0800 11 22 83		
WEBSITE – www.picknpay.co.za		
<u>THANK YOU FOR SHOPPING WITH US</u>		

- 2.1.1. Write the name of the store at which Miss Jones made her purchases and state the name of the cashier that served her. (2)
- 2.1.2. Miss Jones made her purchases in the morning.
Is this statement true? Give a reason for your answer. (2)
- 2.1.3. Immediately after shopping at this store, she went home. It took her 45 minutes to reach home. At approximately what time did she reach **home**? (2)
- 2.1.4. Miss Jones paid R 26,99 for a 2 litre jug of milk.
Calculate the price per litre of milk. (2)
- 2.1.5. Show how the VAT amount of R 11,67 was calculated. (3)
- 2.1.6. "Zero Rated" means that no VAT is charged on an item. Name one item that is zero rated on her till slip. (2)
- 2.2. Miss Jones recently received an increase in her salary and she decided to buy a TV. Miss Jones saw the following advert of a store selling TVs at reduced prices.



SAMSUNG (48 inch) SMART LED TV
SAVE : R4 000
NOW ONLY: R7 999
OR
DEPOSIT R 800 + R 358 × 36

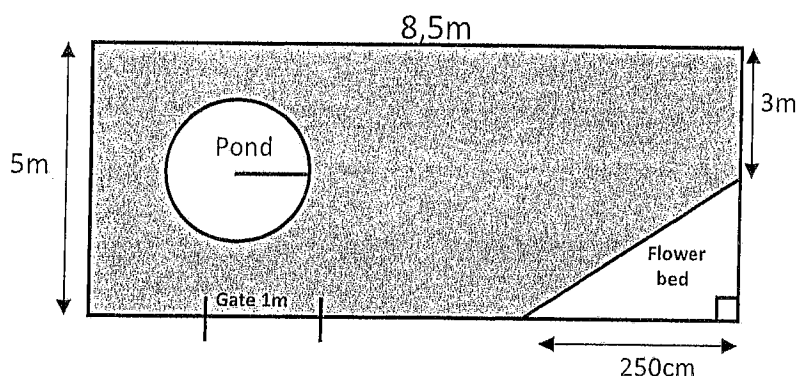
- 2.2.1. Determine the original price of the TV. (2)
- 2.2.2. Determine the percentage discount offered on this TV.
Use the formula: Percentage discount = $\frac{\text{Amount saved}}{\text{original price}} \times 100\%$ (2)
- 2.2.3. Suppose Miss Jones decides to buy the TV on **hire purchase** as advertised, calculate the **total amount** she would pay at the end of the time period. (2)
- 2.2.4. Calculate the amount of interest that Miss Jones will pay each year. (3)
-

QUESTION THREE (16 MARKS)

Miss Jones decided to re-design her rectangular garden by building a circular fish pond and creating a triangular flower bed at one corner of the garden as shown in the sketch below:

{The diagram is not drawn to scale}

NB : The radius of the fish pond is 1,25m



- 3.1. Miss Jones would like to fence the garden and install a gate that is 1m wide. Determine the total length of fencing that is required around the garden (excluding the gate). (3)
You may use the formula: $P = 2(L + B)$
- 3.2. The shaded part of the diagram is the space that will be covered by grass.
- 3.2.1. Determine the area of the entire garden (in m^2) (2)
Area of a rectangle = length \times breadth
- 3.2.2. Determine the area of : (2)
- a) The circular fish pond (in m^2) (2)
Area of a circle = πr^2 (Use π as 3,142)
- b) The triangular flower bed. (in m^2) (3)
Area of a triangle = $\frac{1}{2} \times \text{base} \times \text{height}$
- 3.2.3. Hence, determine the area that will be covered by grass. (2)
- 3.3. The pond has a depth of 1.5m. The level of the water in the pond is 0.3m less than the height of the pond. Calculate the volume of water in the pond (in litres). (4)
 $V = \pi r^2 h$ (Use π as 3,142) HINT: $1m^3 = 1\,000$ litres

QUESTION FOUR (13 MARKS)

Miss Jones recently read an article in the newspaper about the usage of cell-phones being the cause of poor results of learners in high schools. Miss Jones conducted a **survey** to find out which form of social media / application was the most popular amongst the learners in her class.

Her results are as follows:

TABLE 1

F	W	F	W	F	F
W	I	S	I	T	F
I	F	F	W	F	I
F	I	W	F	W	W
T	F	W	W	I	F

KEY

F	Facebook
W	Whatsapp
T	Twitter
I	Instagram
S	Snapchat

- 4.1. Based on her findings, she drew up the following frequency table. Give the values for 4.1.1 and 4.1.2. (2)

SOCIAL MEDIA	TALLY	FREQUENCY
Facebook (F)	(4.1.1)	12
Whatsapp (W)	### IIII	(4.1.2)
Twitter (T)	//	2
Instagram (I)	### I	6

- 4.2. Draw a bar graph on Annexure A to represent the data from the frequency table. Detach Annexure A and hand in with your answer sheet. (4)
- 4.3. Answer the following questions:
- 4.3.1. Which social media/ application is the most popular? (2)
- 4.3.2. Calculate the percentage of learners that chose Facebook. (2)
- 4.3.3. Write down the ratio (in simplified form), of the number of learners who prefer twitter to the total number of learners in the survey. (3)

QUESTION FIVE (13 MARKS)

Miss Jones decided to rearrange her classroom. The new layout is shown on ANNEXURE B.

Refer to the layout and answer the questions that follow:

- 5.1) How many windows and doors are there in this classroom? (2)
- 5.2) How many learner desks are there in this classroom? (2)
- 5.3) Each desk can seat two learners. Determine the maximum number of learners that Miss Jones can fit in her classroom. (2)
- 5.4) State the general direction of the teachers desk from the windows. (2)
- 5.5) The scale used on this layout is 1 : 50.
Calculate the **actual** breadth of the teacher's desk in metres.
Show all working (2)
- 5.6) Assume Miss Jones has 18 boys and 12 girls in her class. If a learner from her class is selected at random for a quiz, determine the probability that it will be a boy. (2)
-

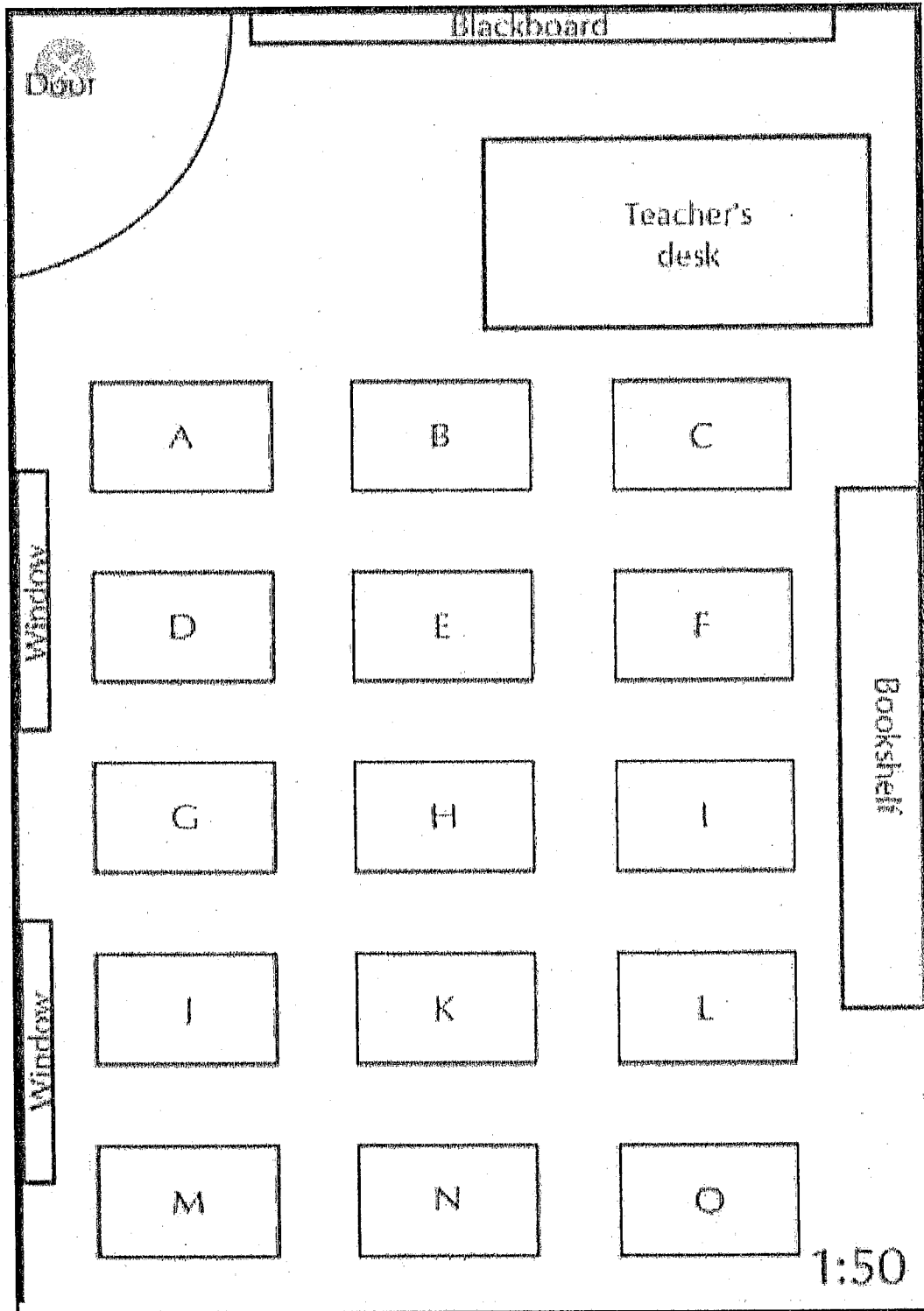
END OF PAPER

TOTAL : 75 MARK

ANNEXURE B

LAYOUT OF CLASSROOM

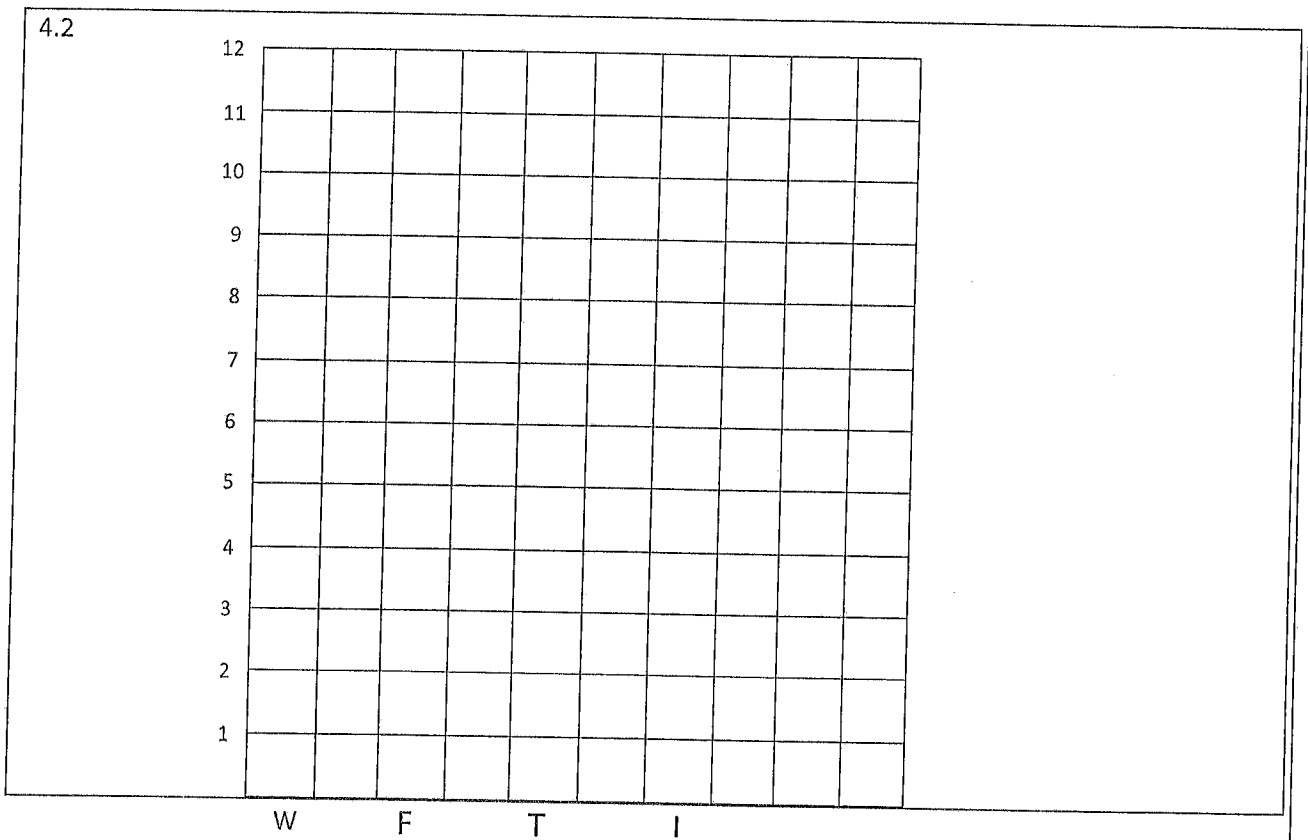
NOTE: Each of the learner desks labelled A to O can seat two learners



ANNEXURE A

DETACH AND HAND IN WITH ANSWER SHEET

NAME: _____





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MARKING MEMORANDUM

<u>QUESTION 1 [12 MARKS]</u>			
1.1.	Value Added Tax✓✓	2A	2
1.2.	14%✓✓	2A	2
1.3.	<u>Advantages:</u> ✓ You can take the item immediately You can pay in monthly instalments Repayments are more affordable Any valid answer <u>Disadvantages:</u> ✓ You end up paying more You pay interest Any valid answer	1A (any one) 1A (any one)	2
1.4.	1 unit on the map represents 20 units in reality✓✓		2
1.5.	17.35m✓✓	2A	2
1.6.	Questionnaires✓✓ or interviews ✓✓	2A Any one response	2
QUESTION 2 (22 MARKS):			
2.1.1	Pick n Pay ✓ XoliZweni ✓	1A reading from till slip 1A reading from till slip	(2)
2.1.2	Not true ✓ 15:26 = afternoon ✓	1 R 1 J	(2)
2.1.3	15:26 + 00:45 ✓ = 16:11 ✓	1 M 1 A	(2)
2.1.4.	26,99 ÷ 2 ✓ = R 13,50 per litre ✓	1M for ÷ by 2; 1A for R13,50 Penalty for not rounding	(2)
2.1.5	R95,03 ✓ × $\frac{14}{114}$ ✓ = R 11,67 or R95,03 ✓ ÷ 1.14 ✓ = R83,36 = R95,03 – R83,36 ✓ = R 11,67	1A for R95,03 ; 1 M for 14 ; 1M for 114 1A for R95,03; 1M for ÷ by 1.14 1M for subtracting	(3)

2.1.6.	Milk OR Pepper OR Potatoes ✓✓	2A	(2)
2.2.1	$R7\ 999 + R4\ 000$ ✓ $= R11\ 999$ ✓	1M adding values 1A	(2)
2.2.2	$R4\ 000 \div R11\ 999$ ✓ x 100 $= 33.34\%$ ✓	1M dividing 1A NPR	(2)
2.2.3	Total = $R800 + (R358 \times 36)$ ✓ $= R13\ 688$ ✓	1A correct values 1A	(2)
2.2.4	$R13\ 688 - R7\ 999 = R5\ 689$ ✓ $R5\ 689 \div 3 = R1\ 896.33$ ✓	1CA 1M ÷3 1 CA	(3)

QUESTION 3 [16 MARKS]

3.1.	P = $2(8.5m + 5m)$ ✓ fencing = $27m - 1m$ ✓ $= 26m$ ✓	1SF 1M subtracting gate 1A	(3)
3.2.1	Area = $8.5m \times 5m$ ✓ $= 42.5m^2$ ✓	1SF 1A NO PENALTY IF UNIT OMITTED	(2)
3.2.2 a)	<u>Area of fish pond</u> $A = \pi r^2$ $= 3.142 \times 1.25^2$ ✓ $= 4.91m^2$ ✓	1SF WITH CORRECT RADIUS 1CA IF DIAMETER USED ($19.64m^2$); (answer only 2 marks)	(2)
b)	<u>Area of Flower Bed</u> $A = \frac{1}{2} \times b \times h$ $= \frac{1}{2} \times 2.5m$ ✓ x $2m$ ✓ $= 2.5m^2$ ✓	1C (2.5m); 1A (2m) 1CA	(3)
3.2.3	<u>Grassed area</u> $= 42.5m^2 - 4.91m^2 - 2.5m^2$ ✓ $= 35.09m^2$ ✓	1M subtracting values from 2.2.2 1CA	(2)
3.3	$1.5m - 0.3m = 1.2m$ ✓ $V = \pi r^2 h$ $= 3.142 \times 1.25^2 \times 1.2m$ ✓ $= 5.89m^3$ ✓ $5.89m^3 \times 1\ 000 = 5\ 890$ litres ✓	1A Height of water 1SF (1.25 and 1.2) 1CA 1CA	(4)

QUESTION 4 [13 MARKS]

4.1.			
4.1.1	HHH HHH II ✓	1A	
4.1.2	9 ✓	1A	2
4.2	<p>12 ✓ 11 10 9 8 7 6 5 4 3 2 1</p> <p>F W T I</p>	1CA per bar	(4)
4.3.1	Facebook ✓✓	2A	(2)
4.3.2	$\frac{12}{30} \times 100 \checkmark$ $= 40\% \checkmark$	1M 1A	(2)
4.3.3	2:30 ✓ 1:15 ✓	1A 1S	(3)

QUESTION 5 [12 MARKS]			
5.1	1 door ✓ 2 windows ✓	1A 1A	(2)
5.2	15 ✓✓	2A	(2)
5.3	30 ✓✓	2A	(2)
5.4	North East ✓✓	2A	(2)
5.5	Breadth = $3\text{cm} \times 50 \checkmark = 150\text{ cm}$ $= 1.5\text{m} \checkmark$	1M (multiply by scale factor) 1CA	(2)
5.6	$P(\text{boy}) = \frac{18}{30} \checkmark = \frac{3}{5} \checkmark$ or 0.6 or 60%	1A 1S	(2)

TOTAL: 75

