

education

Department:
Education
REPUBLIC OF SOUTH AFRICA

GREENBURY SECONDARY SCHOOL
DEPARTMENT OF MATHEMATICS & SCIENCES

GRADE 10

MATHEMATICAL LITERACY
PAPER ONE
NOVEMBER EXAMINATIONS
2016

<u>MARKS</u>	: 75	<u>DURATION</u>	: 1 ½ HOURS
<u>EXAMINER</u>	: S. SHAH	<u>MODERATOR</u>	: K. PAKKIRI

INSTRUCTIONS & INFORMATION

- This paper consists of 4 QUESTIONS AND 6 PAGES
(Including this cover page)
- ANNEXURE A has already been attached to your answer booklet
- Answer all questions and ensure that you follow the numbering system used in this paper
- All calculations and steps must be shown clearly in ink
- Round off all final answers to 2 decimal places unless otherwise stated
- Start each question on a new page

QUESTION ONE (20 MARKS)

1.1 COMPLETE THE FOLLOWING CALCULATIONS

- 1.1.1) Round off 67,839 to 2 decimal places. (1)
- 1.1.2) Write $\frac{15}{45}$ as a percentage to the nearest whole number. (1)
- 1.1.3) Calculate 14% VAT on R165,75 (2 dec) (1)
- 1.1.4) Write $\frac{35}{100}$ as a decimal (2dec) (1)
- 1.1.5) Simplify the ratio R15,00 : 25cents (1)
- 1.1.6) $425 - (3 \times 65)$ (1)
- 1.1.7) $\frac{1}{3} \times \frac{4}{8} \div \frac{3}{16}$ (show all steps) (2)
- 1.1.8) Decrease R350 by 12% (2)

1.2 CHOOSE THE CORRECT ANSWER FROM A, B, C, D FOR AND ANSWER EACH PROBLEM BELOW. WRITE THE NUMBER ONLY. (5 X 2 = 10)

1.2.1) Two fifths of the students in a Life Science class passed the first test. What percentage off the class did not pass the test?

- A) 40% B) 30% C) 60% D) 20%

1.2.2) 25% of what number is 250?

- A) 25 B) 10 C) 1000 D) 2500

1.2.3) Calculate the price excluding VAT of an item that costs R395

- A) 46,49 B) 346,49 C) 347,49 D) 646,49

1.2.4) Karem reads 180 pages of a 600-page book. What percentage of the book did she read?

- A) 30% B) 40% C) 70% D) 60%

1.2.5) A packet of chips that cost R3,75 now costs R4,25. What is the percentage increase in this price?

- A) 12,34% B) 11,76% C) 13.33% D) 86,34%

PTO...PAGE 3 – QUESTION TWO

QUESTION TWO (17 MARKS)

STUDY THE RECIPE BELOW AND ANSWER THE QUESTIONS THAT FOLLOW:

OATS BISCUITS

125G BUTTER

120G BROWN SUGAR

150G CAKE FLOUR

1 LARGE EGG

25G OATS

0,5 TEASPOON BAKING POWDER

0,5 TEASPOON SALT

(THIS RECIPE MAKES 30 BISCUITS)

Answer the following questions. Show all working

- 2.1) Work out how much butter you would require to make 120 biscuits. (2)
- 2.2) What is the ratio, (in its simplest form), of butter : sugar : oats , in the recipe. (3)
- 2.3) The baker needs to bake a large quantity of biscuits for a function. She uses **4,5 kg of butter**. Calculate the amounts of all the other ingredients if the baker keeps the ratios of the ingredients the same as in the original recipe. (6)

COMPLETE THE TABLE ON ANNEXURE A

(ALREADY ATTACHED TO YOUR ANSWER BOOKLET)

INGREDIENTS	NEW QUANTITIES
Butter	4,5 kg
Brown Sugar	
Cake flour	
Eggs	
Oats	
Baking powder	
Salt	

- 2.4) Your oven needs to be set at 200°C for these biscuits. Convert this temperature to °F using the following formula: $^{\circ}\text{F} = (1,8 \times ^{\circ}\text{C}) + 32$ (2)

2.5) COMPLETE THE FOLLOWING CONVERSIONS:

2.5.1) 3kl = _____ ml (1)

2.5.2) 350g = _____ kg (1)

2.5.3) 2500cm = _____ m (1)

2.5.4) 420ml = _____ l (1)

QUESTION THREE (20 MARKS)

3.1.

Zama and Letu have moved into a new house. They would like to create a garden with one square flower patch, a rectangular vegetable patch and a circular swimming pool.

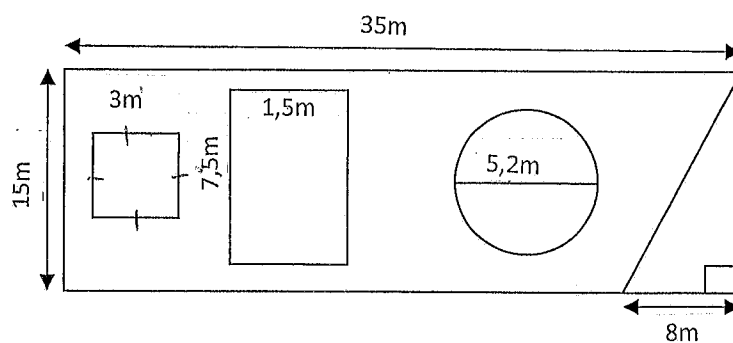
The remainder of the garden will be covered in green grass.

The length of the garden is 35 metres and the breadth is 15 metres.

The square flower patch has a side of 3 metres.

The rectangular vegetable patch is 7,5 metres in length by 1,5 metres in breadth. The circular swimming pool has a diameter of 5,2 metres.

NB - Diagrams are not drawn to scale.



SOME USEFUL FORMULA:

Perimeter of rectangle = $2l + 2b$
Area of rectangle = length x breadth
Area of circle = πr^2
Use pi as 3,142

3.1.1) Determine the perimeter of the whole garden. (2)

3.1.2) Determine the area of the whole garden. (2)

3.1.3) Calculate the area of the flower patch. (2)

PTO...PAGE 5 - QUEST 3.1.4...

3.1.4) Calculate the area of the pool. (1 dec) (2)

3.1.5) They decided to create a triangular patch to house some chickens. They wanted the gate to be placed on the slanting side of the triangular patch. Calculate the LENGTH of the slanting side. (3)

3.2) Calculate the area of the garden that will be covered by green grass only. (5)

3.3) The green grass is sold in boxes. One box covers 3m^2 and costs R37.

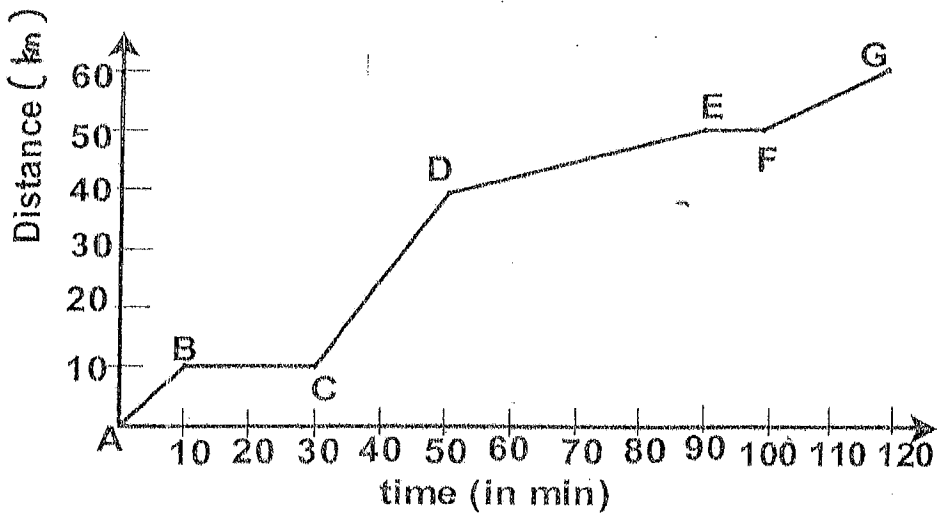
3.3.1) How many boxes must they buy? (2)

3.3.2) How much will they pay for the boxes of grass in total? (2)

QUESTION FOUR (18 MARKS)

4.1) Tom is a taxi driver in Cape Town and lives 10km away from the taxi rank. He measures the distance that he travels everyday.

Study the graph and answer the questions that follow:



4.1.1) Between which two points is the distance between the house and the taxi rank indicated? (1)

4.1.2) How long does it take him to travel from his house to the taxi rank? (1)

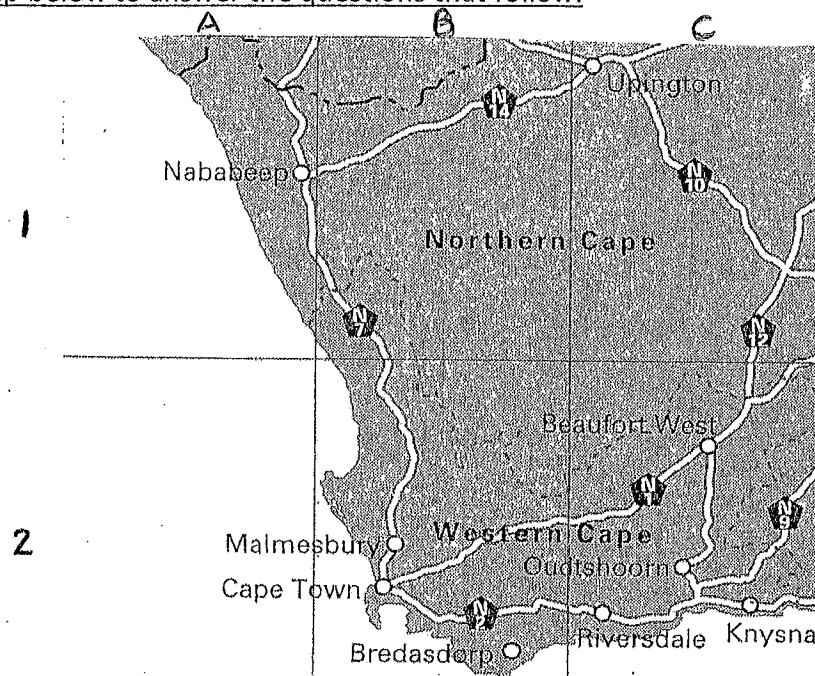
4.1.3) How far did he travel between B and C? (1)

- 4.1.4) Explain what is happening between B and C. (2)
- 4.1.5) If he left his house at 07:00am, at what time does he reach point F? (2)
- 4.1.6) Determine his speed (in km/h) between C and D. (3)

REMEMBER: $\text{Speed} = \frac{\text{distance}}{\text{time}}$

4.2) Tom is planning a trip to Knysna for the December holidays.

Use the map below to answer the questions that follow:



- 4.2.1) Write down the grid reference for Knysna. (1)
- 4.2.2) In which general direction is Knysna from Cape Town? (1)
- 4.2.3) Name the city on the N2 route linking Knysna to Cape Town. (1)
- 4.2.4) If the scale on the map is 1:10 000 000 using the straight line distance, determine the actual distance in kilometres between Cape Town and Knysna. (3)
- 4.2.5) He hires a car for his trip from ABC car hiring company. If they have 6 BLUE CARS, 7 RED CARS, 4 WHITE CARS and 8 SILVER CARS for hire. Determine the probability that Tom will get a SILVER CAR. (as a percentage) (2)

TOTAL : 75 MARKS
END OF PAPER

NOTE : ANNEXURE A HAS ALREADY BEEN ATTACHED TO YOUR ANSWER BOOKLET

GREENBURY SECONDARY SCHOOL



DEPARTMENT OF MATHS & SCIENCES
H.O.D. MR L PILLAY

[Handwritten signature]

Maths lit - Nov - 2016 - Paper 1.

Q u 1 = 20

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1.1 1.1.1 67,84 (1)

1.1.2 33% (1)

1.1.3 R188,96 (1)

1.1.4 0,35 (1)

1.1.5 60 : 10 (1)

1.1.6 230 (1)

1.1.7 $\frac{1}{3} \times \frac{4}{8} \times \frac{16}{3} = \frac{8}{9}$ (2)

1.1.8 $\frac{350}{1} \times \frac{88}{100} = R308$ / $\frac{350}{1} \times \frac{12}{100} = 42 \therefore R350 - 42 = R308$ (2)

(1)

1.2

1.2.1 C = 60% //

1.2.2 C = 1000 //

1.2.3 B = R346,49 //

1.2.4 A = 30% //

1.2.5 C = 13,33% // (2x5=10)

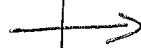
Q u 2 = 17

2.1. 125g x 4 = 500g butter. (2)

(1) 2.2 125g ; 120g ; 25g
25g ; 24g ; 5g (3)

2.3

Butter.



4,5kg.

Brown sugar

36 x 120 = 4320g

✓

Cake flour

36 x 150 = 5400g

✓

Eggs

36 x 1 = 36

✓

Oats

36 x 25 = 900g

✓

Baking Powder

36 x 0,5 = 18g

✓

Salt.

36 x 0,5 = 18g

✓

Annexure

A

(b)

$$\begin{aligned}
 2.4. \quad ^\circ F &= (1,8 \times ^\circ C) + 32 \\
 &= (1,8 \times 200) + 32 \\
 ^\circ F &= 392 \checkmark \quad (2)
 \end{aligned}$$

2.5.

$$2.5.1 \quad 3000 \text{ 000 ml} \quad (1)$$

$$2.5.2 \quad 0,35 \text{ Kg} \quad (1)$$

$$2.5.3 \quad 25 \text{ m} \quad (1)$$

$$2.5.4 \quad 0,42 \text{ l} \quad (1)$$

Q43. - 20

$$\begin{aligned}
 3.1.1 \quad P &= 2l + 2b. \\
 &= (2 \times 15\text{m}) + (2 \times 35\text{m}) \\
 &= 30 + 70 \checkmark \\
 &= 100\text{m} \checkmark \quad (2)
 \end{aligned}$$

$$\begin{aligned}
 3.1.2 \quad A &= l \times b \\
 &= 15 \times 35 \checkmark \\
 &= 525\text{m}^2 \checkmark \quad (2)
 \end{aligned}$$

$$\begin{aligned}
 3.1.3 \quad \text{Area of flower patch} &= A = s^2 \\
 &= 3^2 \checkmark \\
 &= 9\text{m}^2 \checkmark \quad (2)
 \end{aligned}$$

$$\begin{aligned}
 3.1.4 \quad A \text{ of pool} &= \pi r^2 \quad R = \text{Diameter} = \frac{5,2}{2} = 2,6 \\
 &= 3,142 \times (2,6)^2 \\
 &= 21,23992 \\
 &= 21,2 \text{ m}^2 \checkmark \quad (2)
 \end{aligned}$$

$$3.1.5 \quad \text{slanting side}^2 = 8^2 + 15^2$$

$$= 64 + 225$$

$$= 289$$

$$\text{slanting side} = \sqrt{289}$$

$$= 17\text{m} \checkmark$$

(3)

3.2

$$\text{GreenG.} = \text{Area of entire garden} - (\text{Area of square} + \text{A. of rect} + \text{A of } \odot + \text{A of } \triangle)$$

$$= 525 - [9 + (7,5 \times 1,5) + 21,2 + (\frac{1}{2} \times 8 \times 15)]$$

$$= 525 - (9 + 11,25 + 21,2 + 60) \checkmark$$

$$(1) = 525 - 101,45 \checkmark$$

$$= 423,55 \text{ m}^2 \checkmark$$

(5)

3.3

$$3.3.1 \quad \frac{423,55}{3} = 141,18 \Rightarrow 142 \text{ boxes.} \quad (2)$$

$$3.3.2 \quad 142 \times R37 = R 5254 \text{ Total Cost.} \quad (2)$$

(1)

Qu 4 - 18

4.1.1 Between A & B. (1)

4.1.2 10 min. (1)

4.1.3 0 km. (1)

4.1.4 Resting } any (2)
At garage }
Eating } ans. to describe that he stopped.

4.1.5 8.40 am. (2)

4.1.6 $S = \frac{d}{t} = \frac{30 \text{ km}}{\frac{20 \text{ min}}{60}} = 90 \text{ km/h.}$ (3)

4.2

4.2.1 C2 ✓ (1)

4.2.2 SE ✓ (1)

4.2.3 Riversdale ✓ (1)

4.2.4 100 km → 100 km (3)

$48 \text{ cm} \times 100$

OR $4.9 \text{ cm} \times 100$

480 km

490 km

4.2.5 $\frac{81}{25} \times 100 = 32\%$ (2)

TOTAL : 75

NAME OF LEARNER : _____

MATHS LITERACY - PAPER ONE

GRADE 10

NOVEMBER 2016

ANNEXURE A

Q 2.3)

INGREDIENTS	CALCULATIONS	NEW QUANTITIES
Butter		4,5kg
Brown sugar	36×120	4320 g ✓
Cake flour	36×150	5400g ✓
Eggs	36×1	36 ✓
Oats	36×25	900 g ✓
Baking powder	$36 \times 0,5$	18 t ✓
Salt	$36 \times 0,5$	18 t ✓

(6)



[Signature]
27/10/2016

KZN DEPARTMENT OF EDUCATION
GREENBURY SECONDARY SCHOOL
MATHEMATICAL LITERACY
GRADE 10 - PAPER ONE
NOVEMBER EXAMINATIONS
2016

NAME OF LEARNER : _____

GRADE / DIV : _____

EDUCATOR : _____

QUESTION NUMBER	LEARNERS MARK
1	
2	
3	
4	
TOTAL	75

EDUCATOR

CHECKER

MODERATOR