

education

Department:
Education
REPUBLIC OF SOUTH AFRICA

GREENBURY SECONDARY SCHOOL
DEPARTMENT OF MATHEMATICS & SCIENCES

GRADE 10

MATHEMATICAL LITERACY
PAPER TWO
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 7 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 1 (25 MARKS)

1.1) Shazi is a matric learner who makes and sells earrings. Her fixed cost to buy the equipment she needed to start her business was R80,00. It cost her an additional R5,00 for the beads needed to make each set of earrings.

TABLE 1: Cost of making sets of earrings

No. of sets of earrings	0	2	10	14	20	B	30
Cost in Rands	80	90	130	A	180	200	230

1.1.1) Complete the equation:

$$\text{Cost in rand} = \dots + \dots, \text{ \{where } x = \text{ number of sets of earrings made. \}} \quad (2)$$

1.1.2) Calculate the missing values for A and B in the table. (4)

1.1.3) Use the axes provided on ANNEXURE A to illustrate the data in TABLE 1. (Annexure A has already been attached to your answer booklet) (5)

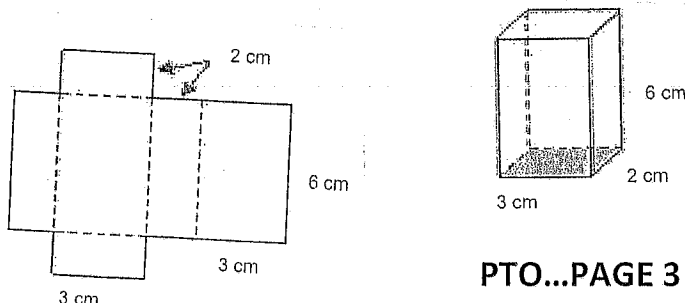
1.2) Shazi makes 50 earring sets. Her expenses are R330 and she makes a profit of R100 when she sells all of them.

Calculate her percentage profit using the formula:

$$\text{Percentage profit} = \frac{\text{profit}}{\text{expenses}} \times 100$$

{Give the answer rounded off to ONE decimal place.} (2)

1.3) Shazi packed the earrings in the box as illustrated below:



PTO...PAGE 3 – Calculate the surface area....

Calculate the surface area of the box.

The following formula may be used: *Surface area = 2lh + 2lb + 2hb* (4)

1.4)

Shazi lives with her aunt and receives a living allowance of R1 260,00 per month from a Trust Fund.

The following are her weekly/ monthly expenses:

- R26, 50 per week for a bus ticket for 10 single trips
- R600, 00 per month for board and lodge at her aunts home
- R40, 00 per month for her church contribution
- R156, 40 per month for her cell-phone contract
- Balance for other living expenses

1.4.1) Write down one fixed expense. (1)

1.4.2) Calculate the cost of her transport to school in a month with 20 school days. (2)

1.4.3) Calculate the percentage of her income that Shazi budgeted for her cell-phone contract. (2)

1.4.4) Calculate the balance that Shazi has for other living expenses. (3)

PTO... PAGE 4 – QUESTION 4

QUESTION TWO (30 MARKS)

2.1) Sam and Jane are a newly married couple and they decided to have three children over the next few years. (no twins or triplets)

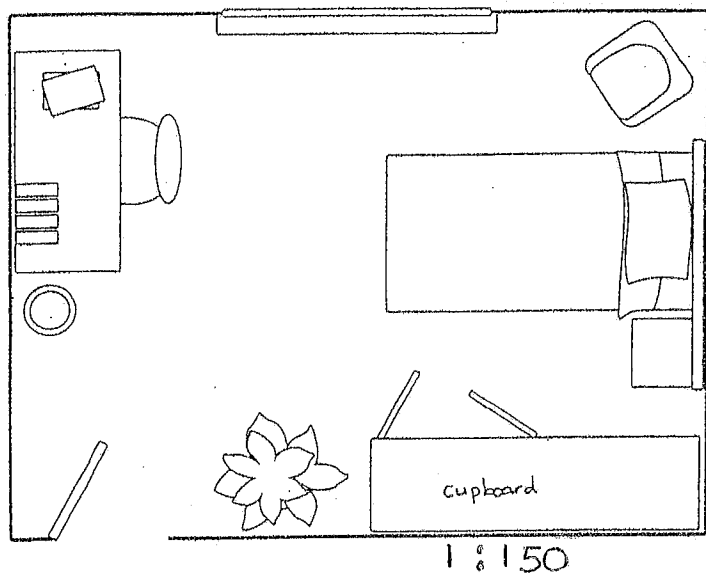
2.1.1) Draw a tree diagram to show all possible outcomes for the above situation. (G - Girl) (B - Boy) [List your outcomes] (8)

2.1.2) What is the probability (as a percentage) that they will have 3 boys? (2)

2.1.3) What is the probability that they will have 2 girls and a boy in any order? (answer as a fraction) (2)

2.2) They decide to plan the room for their first baby.

Study the layout below and answer the questions that follow:



2.2.1) Write down the scale in words. (2)

2.2.2) What are the dimensions of the room in REALITY. (length and breadth)

(2 dec) (4)

2.2.3) Calculate the ACTUAL area of the bedroom in m^2 . (1 dec) (2)

PTO... PAGE 5 – QUESTION 2.2.4)...

2.2.4) What is the length of the cupboard in REALITY? (1 dec) (2)

2.3) The municipality they live in charges water, based on the following tariff system: **(ALL VALUES EXCLUDE VAT)**

TABLE 1

<u>AMOUNT OF WATER USED PER MONTH</u>	<u>COST PER (kl)</u>
0 - 6kl	Free
>6 - 20kl	R6, 27
>20 - 30kl	R12, 53
>30	R14, 23

Customers are further charged a set amount depending upon the number of kilolitres they used in a month as shown in the following table:

TABLE 2

<u>AMOUNT OF WATER USED PER MONTH</u>	<u>FIXED MONTHLY CHARGE</u>
0 - 6kl	Free
>6 - 30kl	R55, 00
>30kl	R80, 00

Sam and Jane's household used **32kl** in one particular month.

Use the above tables to calculate their **water bill** for the month **including VAT**.

(8)

PTO... PAGE 6 – QUESTION 3

QUESTION THREE (10 MARKS)

George wants to buy a new Samsung 46" (117cm) Full HD LCD TV and a Samsung 5.1 3D Blu-ray Home Theatre System from Makro as illustrated below :



- 3.1) What is the total amount George would pay for both items, if he makes the purchase? (2)
- 3.2) George does not have the money to buy the items. He decides to take a loan for R15 000 from ABC bank.

THE BANK OFFERS THE FOLLOWING OPTIONS:

OPTION 1

R15 000 @ 8% p.a simple
interest over 3years

OPTION 2

R 15000 @ 10% p.a
compounded annually over
2 years

- 3.2.1) Calculate the total amount to be repaid (including interest) if he chooses OPTION 1. (3)











PTO... PAGE 7 – QUESTION 3.2.2)...

3.2.2) Calculate the total amount to be repaid (including interest) if he chooses OPTION 2. (3)

3.2.3) Hence, help him to decide which option he should choose. Justify your answer. (2)

QUESTION FOUR (10 MARKS)

4.1) The OLYMPICS took place in RIO DE JANEIRO, Brazil on the 5th to 21st August 2016. The data in the table below shows the number of medals won by the top ten countries participating in these games.

#	country	gold	silver	bronze	total
1.	 USA	46	37	38	121
2.	 GBR	27	23	17	67
3.	 CHN	26	18	26	70
4.	 RUS	19	18	19	56
5.	 GER	17	10	15	42
6.	 JPN	12	8	21	41
7.	 FRA	10	18	14	42
8.	 KOR	9	3	9	21
9.	 ITA	8	12	8	28
10.	 AUS	8	11	10	29

4.1.1) For how many days was the RIO OLYMPICS held? (1)

4.1.2) For the gold medals determine the following:

a) Mean (3)

b) Median (2)

c) Mode (2)

4.1.3) Calculate the range of the silver medals awarded. (2)

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DEPARTMENT OF MATHS & SCIENCES
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TOTAL : 75 MARKS

(Signature)

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



Q1 - 25

1.1.

Cost in rands = $R80 + 5x$. (2)

1.1.2 A - 150 // (2)

B - 24 // (2)

1.1.3 GRAPH. ANNEXURE (5)

1.2 $\frac{100}{330} \times 100 = 30,3\%$ (2)

1.3 SA = $2eh + 2eb + 2hb$.
 $= (2 \times 3 \times 6) + (2 \times 3 \times 2) + (2 \times 6 \times 2)$
 $= 72 \text{ cm}^2$ (4)

1.4 board + lodge / church contribution (1)

1.4.2 $4 \times 26,50 = 106$
 $R106$ (2)

1.4.3 $\frac{156,40}{1260} \times 100 = 12,41\%$ (2)

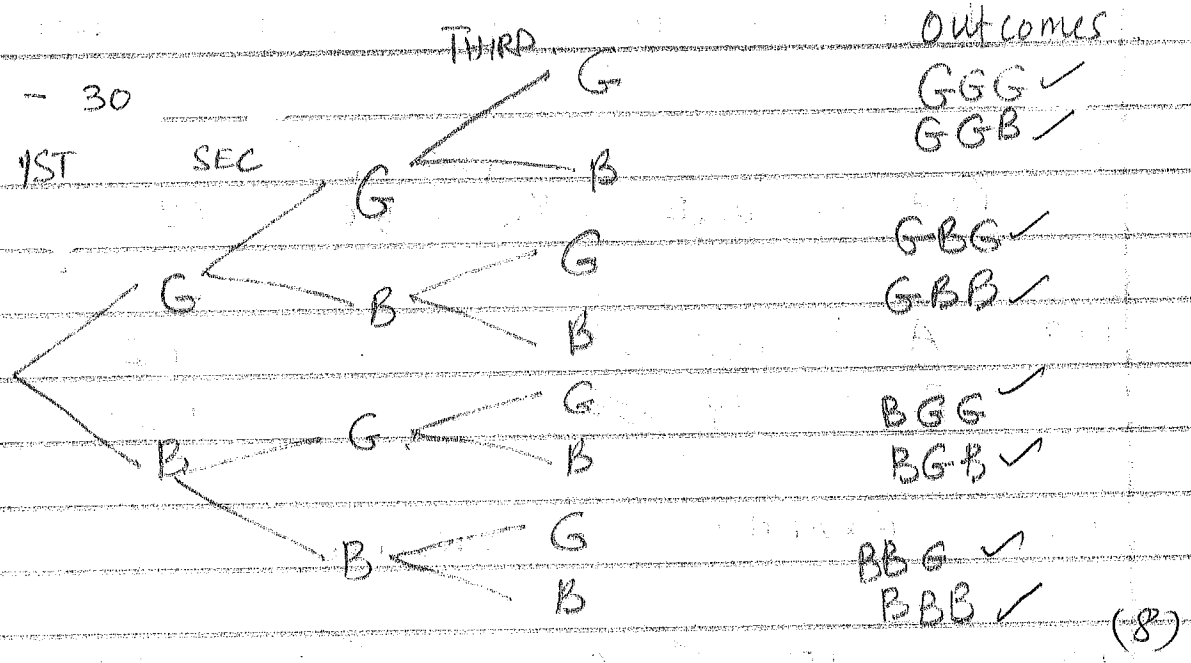
1.4.4 bus ticket = R212
 Bq lodge = R600
 Church contrib. = R40
 Cell ph. = R156,40
 $R1260 - R1008,40$
 $= R251,60 \Rightarrow \text{Balance.}$ (3)



3/11/16

Qu 2 - 30

2.1.



2.1.2. $\frac{1}{8} \times \frac{100}{1} = 12.5\%$

(2)

2.1.3 $\frac{3}{8}$

(2)

2.2.1 1cm on the map represents 150cm in reality. (2)

2.2.2) $b = 6.9 \text{ cm} \times 150 \text{ cm} = 1035 \text{ cm} = 10.35 \text{ m}$
 $l = 9.3 \text{ cm} \times 150 \text{ cm} = 1395 \text{ cm} = 13.95 \text{ m}$ (4)

2.2.3 $A = l \times b$
 $= 13.95 \text{ m} \times 10.35 \text{ m}$
 $= 144.38 \text{ m}^2$ (2)

2.2.4) $4.3 \text{ cm} \times 1.5 \text{ cm} = 6.45 \text{ m}$ OR $4.4 \text{ cm} \times 1.5 \text{ cm} = 6.6 \text{ m}$ (2)

$$2.3. \quad 32 \text{ ke} - 6 \text{ free} = 26 \text{ ke} \cdot -14 = 12 \text{ ke} \cdot$$

$$14 \text{ ke} \times 6,27 = 87,78 \checkmark$$

$$10 \text{ ke} \times 12,53 = 125,30 \checkmark$$

$$2 \text{ ke} \times 14,23 = 28,46 \checkmark$$

$$\text{Fixed monthly charge} = 55,00 \checkmark$$

$$R296,54 \checkmark \times \frac{114 \checkmark}{100}$$

$$= R338,06 \checkmark \quad (8)$$

Qu 3 - 10

$$3.1. \quad 6999 + 3499 = R10498 \quad (2)$$

$$3.2.1 \quad 15000 \times \frac{8}{100} \times 3$$

R3600 ← interest

$$\therefore R15000 + R3600$$

$$= R18600 \checkmark \quad (3)$$

$$3.2.2 \quad 15000 \times \frac{10}{100} \times 1 = 1500 \checkmark$$

$$16500 \times \frac{10}{100} \times 1 = 1650 \checkmark$$

$$16500 + 1650 = R18150 \checkmark \quad (3)$$

3.2.3. Option 2 cheaper. (2)

Qu 4 - 10

4.1.1 17 days

(1)

$$4.1.2 a) \underline{46 + 27 + 26 + 19 + 17 + 12 + 10 + 9 + 8 + 8}$$

$$\frac{182}{10}$$

10 ✓

$$\text{Mean} = 18,2$$

✓

(3)

(b) median

$$\frac{17+12}{2}$$

$$\frac{29}{2}$$

$$= 14,5$$

$$= 14,5$$

$$= 14,5$$

(2)

(c)

$$\text{mode} = 8$$

✓

(2)

4.1.3 37 - 3

$$= 34$$

✓

(2)

TOTAL : 75

ANNEXURE A:

NAME: _____

QUESTION 1.1.3

Grade 10
1 starting point = 80
1 end point (30, 220)
2 any 2 correct points
straight line graph.

Cost of making Sets of Earrings

