education GREENBURY

Department:
Education
PROVINCE OF KWAZULU-NATAL

ENQUIRIES: MR D.A. SEWLALL DATE: 13 SEPTEMBER 2017

NATIONAL SENIOR CERTIFICATE: PREPARATORY EXAMINATION SEPTEMBER 2017: GRADE 12

TO: THE CHIEF INVIGILATOR OF ALL SCHOOLS OFFERING

ERRATA: MATHEMATICAL LITERACY P1

Please take note of the following change:

PAGE	ERROR	CORRECTION
6 **Question 3.3.3**	Convert the volume in **(a)** above to litres.	Convert the volume in **3.3.2** above to litres.

Kindly ensure that candidates are informed of the Errata.

MR R.C. PENNISTON
ACTING SENIOR GENERAL MANAGER
PROVINCIAL EXAMINATIONS SERVICES

14/09/2017
DATE

...Championing Quality Education-Creating and Securing a Brighter Future

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Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

SEPTEMBER 2017

MARKS: 150

TIME: 3 hours

This question paper consists of 10 pages, 1 Answer Sheet and an Addendum with 5 Annexures.

INSTRUCTIONS AND INFORMATION

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

2.

2.1 Use the ANNEXURES in the ADDENDUM to answer the following questions:

ANNEXURE A for QUESTIONS 3.1 and 3.2
ANNEXURE B for QUESTION 3.3
ANNEXURE C for QUESTION 4.1
ANNEXURE D for QUESTION 4.2
ANNEXURE E for QUESTION 5.2

2.2 Answer Question 5.2.4 on the attached ANSWER SHEET.

2.3 Write your name in the space 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. Start **EACH** question on a **NEW** page.

5. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.

6. **ALL** the calculations must be clearly shown.

7. Round off **ALL** final answers appropriately according to the given context unless stated otherwise.

8. Units of measurement must be indicated where applicable.

9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

10 Write neatly and legibly.

QUESTION 1

Khanyi sells shoes in her shop. She pays R2 500,00 for renting the shop in Pietermaritzburg. The cost price of one pair of shoes is R300, 20. She sells one pair of shoes at R750,00.

1.1 Is the rent a fixed or variable expense? (2)

1.2 Write down the equation to calculate Khanyi's monthly income from the sale of shoes. (2)

1.3 In June she sold 17 pairs of shoes.

1.3.1 Determine the profit on the sale of one pair of shoes. (2)

1.3.2 In July Khanyi sold double the number of pairs of shoes she sold in June. Determine the income she made. (2)

1.4 Each pair of shoes is packed in a rectangular box with the following dimensions:

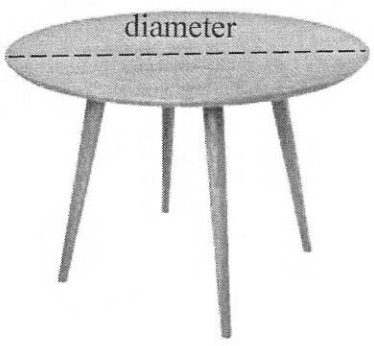
length = 35 cm, width = 16 cm and the height = 8 cm.

1.4.1 Which of the following formulae is used to calculate the volume of a rectangular box? Write only the letter of the correct answer.

A. $\frac{1}{2} \times \text{base} \times \text{height}$
B. $\text{length} \times \text{width} \times \text{height}$
C. $\pi \times \text{radius}^2 \times \text{height}$
D. $\text{length} \times \text{width}$ (2)

1.4.2 (a) The table in Khanyi's shop is circular in shape with a diameter of 1,9 metres. Determine the radius in metres. (2)

Photo of a table in Khanyi's shop.



(b) Hence determine the radius in millimetres. (2)

1.5 In July Khanyi ordered 60 pairs of shoes in different colours: 12 red, 5 blue, 30 black and the rest were white.

1.5.1 Determine the number of white pairs ordered by Khanyi. (2)

1.5.2 Calculate the percentage of pairs of red shoes of the total number of pairs of shoes ordered. (2)

1.6 Khanyi stocks perfumes from a wholesale and sells them in her shop.
She buys 120 bottles of perfumes at R4 416, 00. The perfumes are packed in dozens.

1.6.1 Determine:

(a) the total number of dozens bought. (2)

(b) the cost price of each perfume. (2)

1.6.2 Khanyi adds 75% mark up on the cost price of the perfume to cover other costs and to make profit. Calculate the income from the sale of all the perfumes. (3)

1.7 Thulani assists Khanyi as part time shop assistant only on Saturdays. They work from 09:00 to 13:00. Assume there are four weeks in a month. He earns R35, 00 per hour.

1.7.1 Calculate Thulani's monthly pay. (3)

1.7.2 On one Saturday, Thulani worked for $1\frac{1}{2}$ hours. Determine how much he will earn for that Saturday. (2)
[30]

QUESTION 2

Mavuvuka is the name of the stokvel for Siyajabula primary school staff members.

There are 35 members contributing in the stokvel.
Members pay monthly contributions in hundred rands increments which increase every month. They contribute for 11 months. They buy groceries at the end of November with 40% of their savings and the rest is used for children's back- to- school cost.
The money is deposited at the bank on the 1st of every month.

NOTE: Dineo's contributions increase by R100 per month.
Amanda's contributions increase by R200 per month.

Table 1 below shows the monthly contributions of two staff members, Dineo and Amanda.

TABLE 1: Mavuvuka monthly contribution for Dineo and Amanda. Other months have been omitted

Month	**Jan 2016**	**Feb 2016**	**.....**	**May 2016**	**.....**	**Nov 2016**
Dineo's contribution (R)	100	200	.....	**A**	.....	**1 100**
Amanda's contribution (R)	200	400	.....	1 200	.....	**B**

2.1 Determine the missing values **A** and **B**. (4)

2.2 Calculate Amanda's total contribution for 11 months. (3)

2.3 Calculate the amount that Amanda will use to buy groceries if she uses 40% of her total contributions for 11 months (excluding interest). (2)

2.4 In January 2017, Amanda decided to increase her initial contribution from R200 to R250. Calculate the percentage increase.

You may use the following formula:

$$\textbf{Percentage increase} = \frac{\textbf{New amount} - \textbf{Old amount}}{\textbf{Old amount}} \times \textbf{100\%}$$ (2)

2.5 Explain the terms *interest* and *interest rate*. (4)

2.6 Determine the total amount for January 2016 if 18 members contributed R100,00 each and 17 members contributed R200,00 each as initial amounts. (3)

2.7 The bank offers Mavuvuka stokvel 3,5% interest rate per annum compounded monthly.

2.7.1 Determine the monthly interest rate. (2)

2.7.2 Hence determine the total amount (with interest) at the end of the second month. (8)

[28]

QUESTION 3

Mr Potgieter is a farmer who grows cabbages and other vegetables in his farm in Muden. He supplies cabbages to fruit and vegetable wholesalers in KwaZulu Natal. He owns five 3 tonne trucks. The length of the cabbage field is 1 000 metres and the width is 800 metres.

Use the information above and ANNEXURE A in the addendum to answer the following questions.

3.1 Calculate the area of the field in square kilometres (km^2).

You may use the following formula:

Area of a rectangle = length × width (3)

3.2 There are two gates in the field, one on the eastern side and the other on the western side. Each gate has a width of 3 metres. Determine the length of the wire mesh fence that Mr Potgieter must buy to fence the field. (3)

3.3 Water for the field is kept in a cylindrical concrete tank with a outer diameter of 20 metres, a height of 4 metres and the thickness of the walls is 50 centimetres.

Use ANNEXURE B to answer the following questions.

3.3.1 Show by calculations that the inner radius of the concrete tank is 9,5 m. (4)

3.3.2 Calculate the volume of water a concrete tank can hold.

You may use the following formula:

Volume of a cylinder = π × radius^2 × height **use π= 3,142** (3)

3.3.3 Convert the volume in (a) above to litres.

Note: 1 000cm^3 = 1 litre (4)

3.3.4 The inside of the concrete tank will be painted with waterproof paint. Calculate the area that needs to be painted.

You may use the following formula:

Surface area of the cylinder = π × radius^2 + (π × inner diameter × height) (2)

3.4 How many kilograms of cabbage can be transported if 2 of the trucks are loaded to capacity and a third to half its capacity? (2)

Note: 1 tonne = 1 000 kg

3.5 The truck travels 2 hours 36 minutes to deliver cabbages in Vryheid which is 188 km away from Muden.

Determine the average speed (in km/h) at which the truck was travelling.

You may use the following formula:

$$\textbf{Average Speed} = \frac{\textbf{Distance}}{\textbf{Time}}$$ (2)

3.6 It takes 90 days for cabbages to be ready for harvesting. Determine the date and month on which the cabbages will be ready if they were planted on 1 June 2017. (2)

[25]

QUESTION 4

4.1

Miss Khumalo teaches Mathematical Literacy at Joy High School in Vryburg. Two learners share a desk. The arrangement of furniture in Miss Khumalo's classroom is shown in ANNEXURE C.

Use the information above, ANNEXURE C and ANNEXURE D to answer the following questions.

4.1.1 Determine the number of learners in Miss Khumalo's class if all desks are occupied. (2)

4.1.2 When entering the classroom, does the door open to the left or to the right? (2)

4.1.3 Explain what the scale 1 : 80 means. (2)

4.1.4 The length of the classroom on the plan is 14,2 cm and the width is 12,1 cm. Determine the actual length and the width of the classroom in metres. (6)

4.2

Miss Khumalo's colleague who teaches History organises the educational tour for grade 12 learners from Vryburg to Durban local History museum. They used a map with a distance from Vryburg to Durban was measured as 6,9 cm.

4.2.1 Determine the distance (in miles) from Vryburg to Durban if on the bar scale on that map 1,4 cm represents 100 miles. (3)

4.2.2 Convert the answer in 4.2.1 to kilometres.

Note: 1 mile = 1, 6 km (2)

4.2.3 Give the general direction of Durban from Vryburg. (2)

4.2.4 Which national park is found near Cape Town? (2)

4.2.5 Match column **A** with column **B**.

COLUMN A	COLUMN B
Pretoria	Judicial country capital
Bloemfontein	Legislative country capital
Cape Town	Administrative country capital

(3)
[24]

QUESTION 5

Most learners benefit from the National School Nutrition Programme. A survey was conducted in two schools (Nkoane High and Sizwe High) to find out how many learners dish at school, bring lunch boxes or carry pocket money.

The table below shows the results of a survey.

5.1 TABLE 2: Results of a survey from Nkoane High school and Sizwe High school

Name of school	Only dish at school		Only bring own lunch boxes		Only carry pocket money	
	Male	Female	Male	Female	Male	Female
Nkoane high	150	189	22	102	312	66
Sizwe high	316	360	47	173	405	213

5.1.1 Determine the total number of learners attending Sizwe High School. (2)

5.1.2 Calculate the percentage of female learners at Nkoane High School who only dish at school. Round the answer to the nearest percentage. (4)

5.1.3 Determine the probability (as a decimal fraction) of choosing a male from both schools who dishes at school. (4)

5.2 ANNEXURE E in the addendum shows a summary of schools performance in the National Senior Certificate (NSC) Examination in 2016. Read the summary and answer the following questions.

5.2.1 Use the given percentage to calculate the number of schools that achieved from 40 – 59,9% in the North West. (3)

5.2.2 Give the name of the province which had the highest number of schools in which candidates wrote the NSC examination in 2016. (2)

5.2.3 Write the ratio in simplest form of the total number of schools in the Eastern Cape to the total number of schools in Gauteng in which candidates wrote the NSC examination in 2016. (2)

5.2.4 Complete the histogram and the labels on the provided answer sheet using the percentages for National total number of schools found in ANNEXURE E. (7)

5.2.5 What is the probability of choosing a school in KwaZulu Natal which achieved from 60 – 79,9%. Round your answer correct to two decimal places. (3)

5.3 Mrs Gilbert, a grade 12 educator, teaches learners about Body Mass Index (BMI). She brings a digital bathroom scale and a measuring tape in class. Table 3 shows the weight of 60 learners in three classes.

TABLE 3: Weight of learners in 12A, 12B and 12C classes.

12 A	50	48	55	53	55	56	51	60	62	57
	52,5	60	58	43	47	50	51	58	55,5	60

12 B	40	42	46	46	48	48	51	51	51	52
	53	55	57	58	60	60,2	61	64	68	70

12 C	43	47	48,1	49	50	52	53,1	53,6	54	56
	56,2	57	60	60	61	61	63	63	65	65

5.3.1 Determine:

(a) the mean (average) weight of learners in 12A. (3)

(b) the modal weight of learners in 12B. (2)

(c) the median weight of learners in 12C. (3)

5.3.2 (a) Calculate quartile 1 and quartile 3 for 12C. (4)

(b) Hence calculate the interquartile range for 12 C. (2)

5.3.3 Show by calculations that the range for the weight of 12A class is 19 kg. (2)

[43]

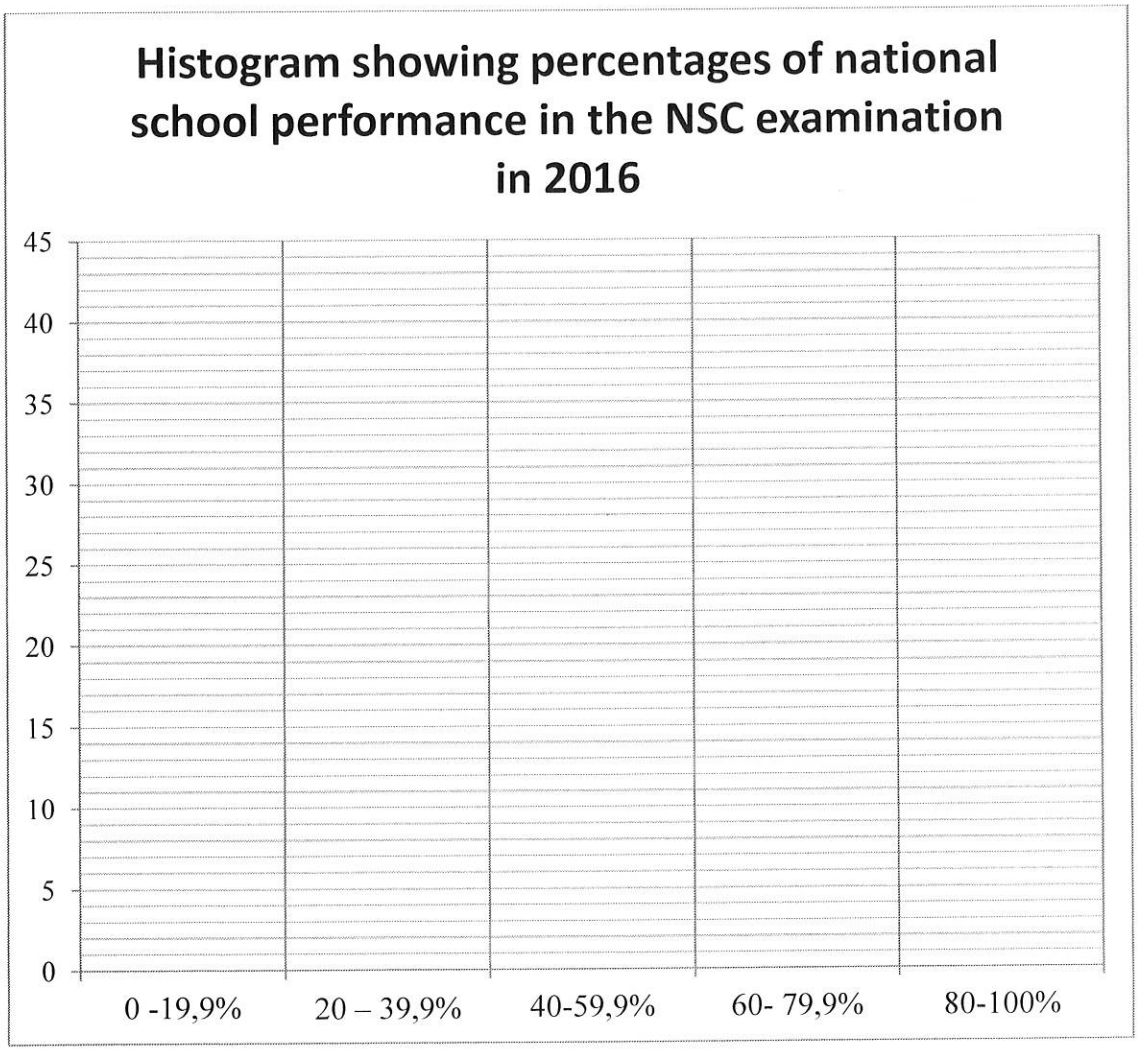
TOTAL: 150

ANSWER SHEET

NAME: _____ **CLASS:** _____

For question 5.2.4

Histogram showing percentages of national school performance in the NSC examination in 2016.



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MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

ADDENDUM

SEPTEMBER 2017

NATIONAL SENIOR CERTIFICATE

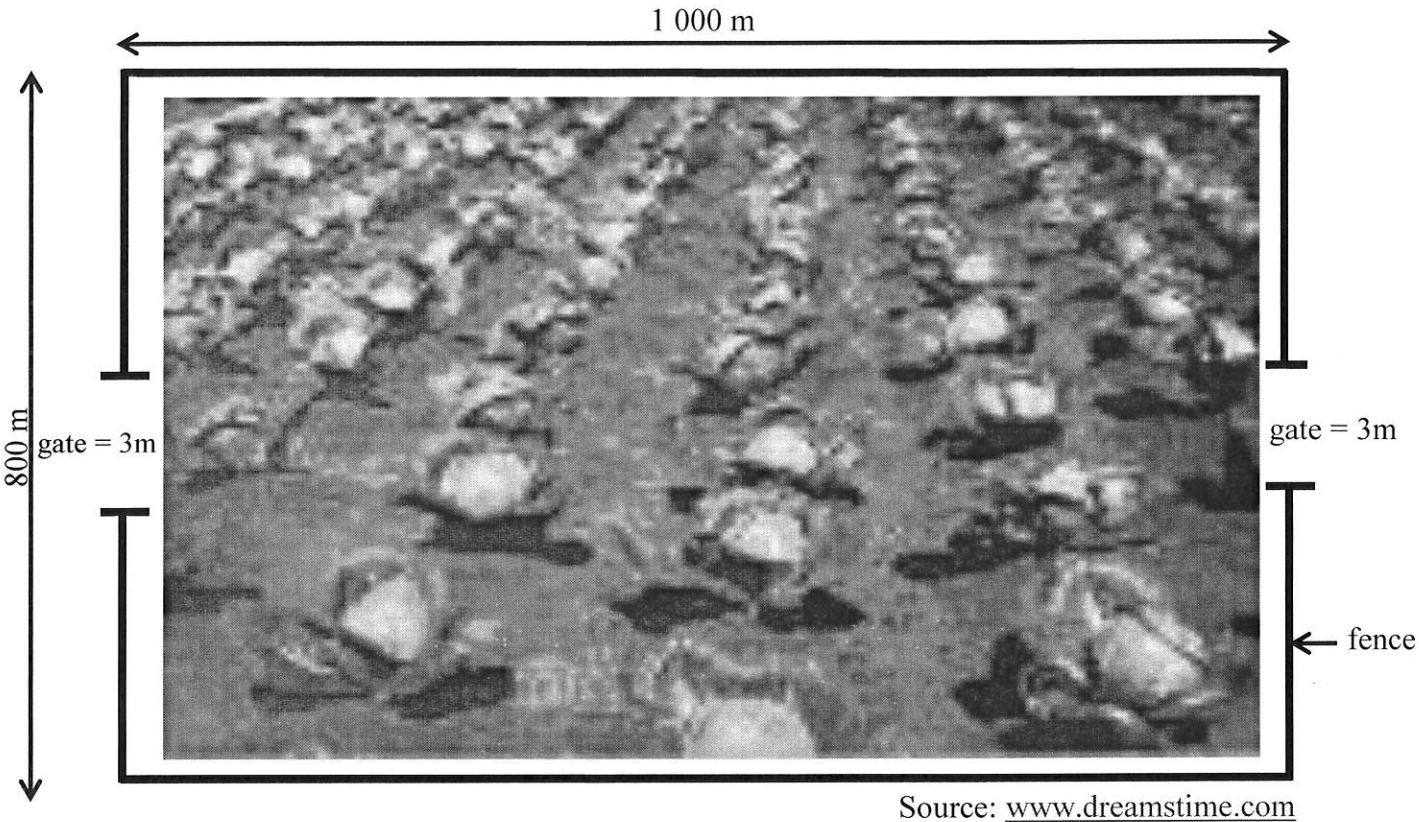
GRADE 12

This addendum consists of 5 pages with 5 Annexures.

ANNEXURE A

QUESTIONS 3.1 AND 3.2

PHOTO OF MR POTGIETER'S CABBAGE FIELD

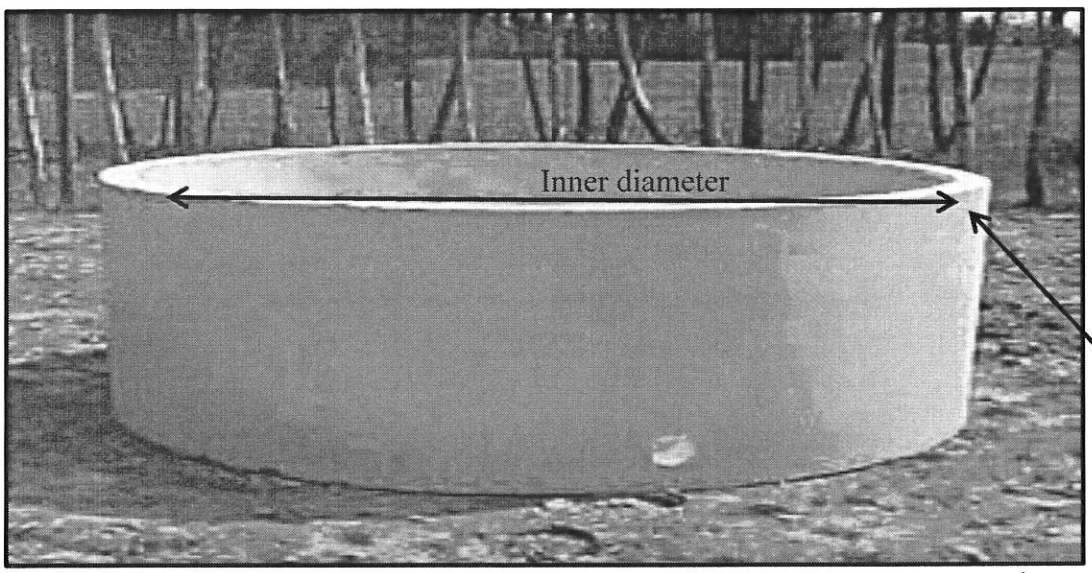


Source: www.dreamstime.com

ANNEXURE B

QUESTION 3.3

PHOTO OF A CONCRETE DAM

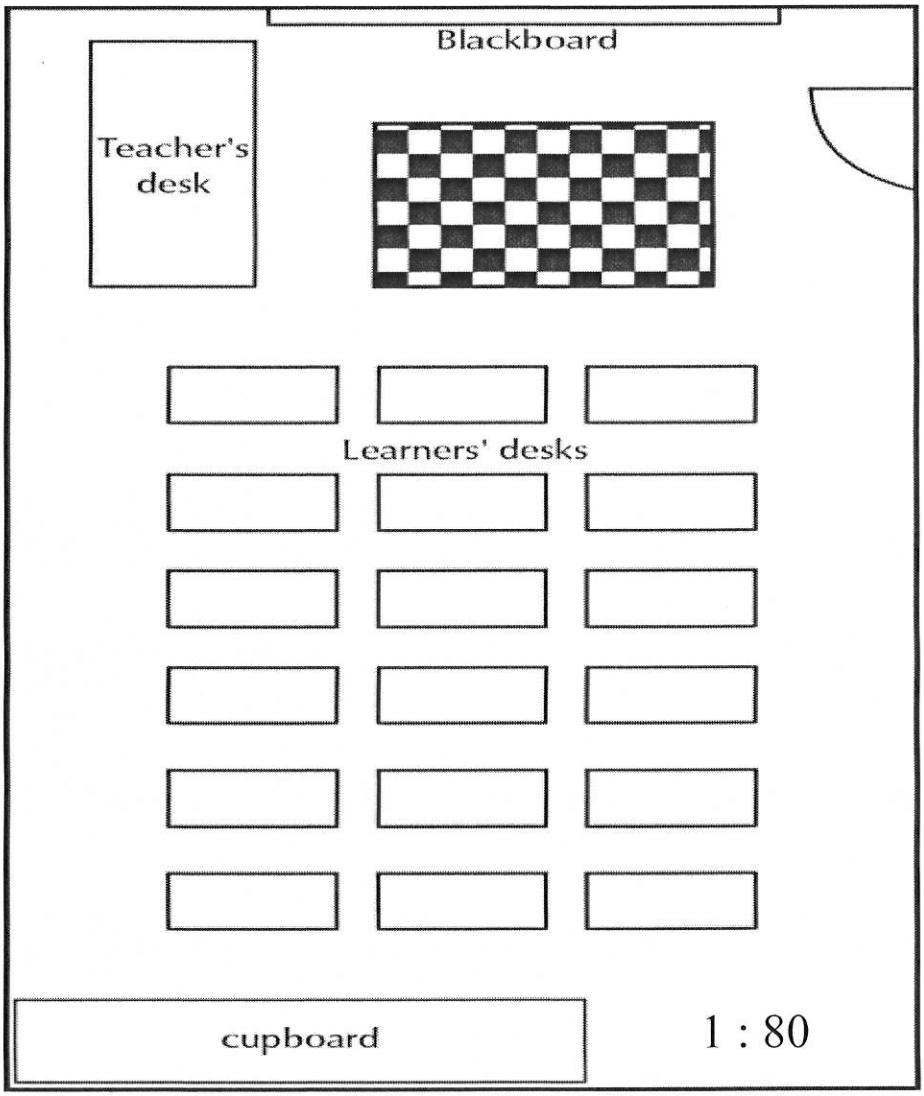


Source: www.concretetanks.com

ANNEXURE C

QUESTION 4.1

FLOOR PLAN OF MISS KHUMALO'S CLASSROOM



ANNEXURE D

QUESTION 4.2

MAP OF SOUTH AFRICA

Source: www.mapsofworld.com

ANNEXURE E

QUESTION 5.2

ADAPTED SUMMARY OF SCHOOL PERFORMANCE IN NSC EXAMINATION 2016

Provinces		Total number of schools	0 - 19,9%	20 - 39,9%	40 - 59.9%	60 - 79.9%	80 - 100%
Eastern Cape	Number	925	43	183	276	231	192
	%		4,6	19,8	29,8	25,0	20,8
Free State	Number	328	0	1	4	58	265
	%		0,0	0,3	1,2	17,7	80,0
Gauteng	Number	875	3	6	47	207	612
	%		0,3	0,7	5,4	23,7	69,9
KwaZulu Natal	Number	1 745	105	240	388	486	526
	%		6,0	13,8	22,2	27,9	30,1
Limpopo	Number	1 413	43	217	382	444	327
	%		3,0	15,4	27,0	31,4	23,1
Mpumalanga	Number	551	1	14	64	189	283
	%		0,2	2,5	11,6	34,3	51,4
North West	Number	400	1	3	–	121	249
	%		0,3	0,8	6,5	30,3	62,3
Northern Cape	Number	136	0	4	16	38	78
	%		0,0	2,9	11,8	27,9	57,4
Western Cape	Number	441	0	3	18	99	321
	%		0,0	0,7	4,1	22,4	72,8
National	Number	6 814	196	671	1 221	1 873	2 853
	%		2,9	9,8	17,9	27,5	41,9

Source: NSC School Performance Report 2016

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MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

MARKING GUIDELINES

SEPTEMBER 2017

NATIONAL SENIOR CERTIFICATE

GRADE 12

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD	Reading from a table/ graph/ diagram
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example
J	Justification
R	Rounding off
F	deriving a formula
E	Explanation
AO	Answer only full marks
NPR	No penalty for rounding
P	Penalty for units, rounding etc.

This marking guidelines consists of 14 pages.

QUESTION 1 [33 MARKS]			
Ques.		**Explanation**	**T/L**
1.1	Fixed ✓✓A	2A answer (2)	F L1
1.2	Monthly income = R750,00 × number of shoes sold ✓✓A **OR** Monthly income = R750 (n) ✓✓A **OR** Monthly income = R750 × n ✓✓A where n = number of shoes sold	2A answer (2)	F L1
1.3.1	Profit = R750,00 – R300, 20 ✓MA = R449, 80 ✓A	1MA subtracting correct values 1A answer (2) **AO**	F L1
1.3.2	Income = R750,00 × 34 ✓MA = R25 500,00 ✓CA	1MA multiplying by R750 by 34 1CA answer (2) **AO**	F L1
1.4.1	B ✓✓A	2A answer (2)	M L1
1.4.2 (a)	Radius = 1,9 m ÷ 2 ✓M = 0,95 m ✓A	1M dividing diameter by 2 1A answer (2) **AO**	M L1
(b)	Radius = 0,95 m × 1 000 ✓M = 950 mm ✓A	1 M multiplying by 1 000 1 A answer (2) **AO**	M L1
1.5.1	Number of white pairs = 60 – (12 +5 +30) ✓M = 13 ✓A	1M subtracting 47 1A answer (2) **AO**	P L1
1.5.2	Percentage of red pairs of shoes = $\frac{12}{60}$ × 100% ✓M = 20 % ✓A	1M % concept 1A answer (2) **AO**	P L1

1.6.1 (a)	Number of dozens = $\frac{120}{12}$ ✓M = 10 ✓A	1M 1A **AO**	dividing by 12 answer (2)	F L1
(b)	Cost price of each perfume = $\frac{\text{R4 416,00}}{120}$ ✓M = R36, 80 ✓CA	1M 1CA **AO**	dividing by 120 answer (2)	F L1
1.6.2	Mark-up Price = 100% + 75% = 175% ✓M Income = 175% × R4 416,00 ✓M = R7 728 ✓CA **OR** Mark-up Price = 75% ×R4 416,00 ✓M = R3 312 ✓S = R4 416 + R3 312 = R7 728 ✓CA **OR** Mark-up Price = R36,80 + (0,75 x R36,80) ✓M = R64,40 ✓S = R64,40 x 120 = R7 728 ✓CA **OR** Mark-up = R36,80 x 75% ✓M = R27,60 ✓S Income = R27,60 + R36,80 = R64,40 x 120 = R7 728 ✓CA **OR** Mark-up = 175% x R36,80 ✓M Income = R64,40 x 120 ✓S = R7 728 ✓CA	1M 1M 1CA 1M 1S 1CA 1M 1S 1CA 1M 1S 1CA (3)	adding percentages multiplying by 175% answer multiplying by 75% simplification answer adding 0,75 of R36,80 simplification answer multiplying by 75% simplification answer multiplying by 175% simplification answer	F L1

1.7.1	Daily pay = 4 hours × R35, 00 ✓MA = R140,00 Monthly pay = R140, 00 × 4 ✓MA = R560, 00 ✓A **OR** ✓MA✓MA Monthly pay = 4 × 4 × R35, 00 = R560, 00 ✓A	1MA 1MA 1A 2MA 1A (3)	multiplying by 4 hours multiplying by 4 Saturdays answer multiplying by 4 hours and by 4 Saturdays answer	F L1
1.7.2	Earnings = 1,5 hours × R35,00 ✓M = R52,50 ✓A **OR** 1 hour + 0,5 hour Earnings = R35,00 + R17,50 ✓M = R52,50 ✓A	1M 1A 1M 1A (2)	multiplication answer adding answer	F L1
		[30]		

QUESTION 2 [28 MARKS]			
2.1	A = R500,00 ✓✓A B = R2 200,00 ✓✓A	2A answer 2A answer (4) **ACCEPT: R2 400 for B**	F L1
2.2	Amanda's total contribution = R200,00 + R400,00 + R600,00 + R800,00 + R1 000,00 + R1 200,00 + R1 400,00 + R1 600,00 + R1 800,00 + R2 000,00 + R2 200,00 ✓✓M = R13 200, 00✓CA	2M adding all correct values 1CA answer (3) **AO** **ACCEPT: R14 600**	F L1
2.3	Money for groceries = 40% × R13 200,00 ✓M = R5 280,00 ✓CA	1M multiplying by 40% or 0,4 1CA answer (2) **AO** **ACCEPT: R5 840**	F L2
2.4	% increase = $\frac{\text{New amount} - \text{Old amount}}{\text{Old amount}} \times 100\%$ = $\frac{R250,00 - R200}{R200,00} \times 100\%$✓SF = 25% ✓A	1SF correct substitution 1A answer **AO** (2)	F L2
2.5	Interest is the money earned / paid when you have invested/borrowed money from a financial institution. ✓✓E **OR** Any relevant explanation Interest rate is the percentage at which interest is calculated. ✓✓E **OR** Any relevant explanation	2E explanation 2E explanation (4)	F L1
2.6	Total amount for the 1st month's contribution ✓MA ✓MA = (18 × R100,00) + (17 × R200,00) = R1 800,00 + R3 400,00 = R5 200,00✓A	1MA multiplying 18 by R100,00 1MA multiplying 17 by R200,00 1A answer (3)	F L1

2.7.1	Interest rate p.a = 3,5% Interest rate per month = $\frac{3,5\%}{12}$ ✓M = 0,0029166666✓CA **OR** = 0,291666666% ✓CA	1M dividing by 12 1CA monthly interest rate (2) **AO**	F L2
2.7.2	Total amount end of 1st month = R5 200,00 +(0,0029166666 × R5 200,00) ✓M = R5 215,17 ✓CA Total amount end of 2nd month ✓M ✓M New amount = R5 215,17 + (18 × R200 + 17 × R400) = R5 215,17 + (R3 600 + R6 800) ✓S = R15 615,17 ✓A = R15 615,17 +(0,0029166666 × R15 615,17) ✓M = R15 660,71 ✓CA	1M multiplying R5 200,00 by monthly interest rate 1CA answer 2M multiplying by R200 and R400 1S simplification 1A answer 1 M multiplying new amount by monthly interest rate 1CA answer (8)	F L3
		[28]	

QUESTION 3 [25 MARKS]			
3.1	Area of a rectangle = length × width = (1 000m ÷ 1 000) × (800m ÷1 000) ✓C = 1 km × 0,8 km ✓SF = 0,8 km² ✓CA **OR** Area of a rectangle = length × width = 1 000m × 800m ✓SF = 800 000 m² = $\frac{800000}{1000000}$ ✓C = 0,8 km² ✓CA	1C converting m to km 1SF correct substitution 1CA answer **OR** 1SF correct substitution 1C converting m² to km² 1CA answer (3)	M L2
3.2	✓M ✓M L of fence= 1 000m + 1 000m + 800 +800 - (3m + 3m) = 3 594 m ✓CA **OR** ✓M ✓M length of fence = (1 000m × 2) + (800m × 2) – 6m = 3 594 m ✓CA	1M Adding all sides 1M subtracting length of gates. 1CA answer 1M adding all sides 1M subtracting length of gates. 1CA answer (3)	M L1
3.3.1	Inner diameter = outer diameter – thickness of the walls = 20 m – (50 cm ÷100) × 2 ✓C = 20 m – 1m ✓M = 19 m ✓CA Inner radius = 19 m ÷2 ✓M = 9,5 m	1C converting cm to m 1M subtracting thickness of both sides 1CA answer 1M dividing diameter by 2 (4)	M L2

3.3.2	Volume of a cylinder = π × radius² × height = 3,142 × (9,5m)² × 4 m ✓SF ✓CA ✓A = 1 134,262 m³	1SF correct substitution 1CA answer 1A unit (3)	
3.3.3	Volume of cylinder = 1 134,262 m³ × 1 000 000 ✓C = 1 134 262 000 cm³ ✓CA 1 litre : 1 000 cm³ litres : 1 134 262 000 cm³ litres = $\frac{1134262000}{1000}$ ✓M = 1 134 262 litres ✓CA	1C converting m³ to cm³ 1CA answer 1M dividing by 1 000 1CA answer (4)	M L2
3.3.4	Surface area of a cylinder = π r² + (π × inner diameter × height) = 3,142 × (9,5m)² + (3,142 × 19 m × 4 m)✓SF = 522, 36 m² ✓CA	1SF correct substitution 1CA answer (2)	M L2
3.4	Maximum no. of kg = 1 tonne :1 000 kg ✓M = 7,5 tonne : kg = 7 500 ✓A **OR** = 3 tonne + 3 tonne + 1,5 tonne = 7,5 tonne × 1 000 kg ✓M = 7 500 kg ✓A	1M multiplying 7.5 by 1 000 1A answer 1M multiplying by 1 000 1A answer (2) **AO**	M L1
3.5	Average speed = $\frac{\text{Distance}}{\text{Time}}$ = $\frac{188\text{km}}{2,6\text{ hours}}$ ✓C = 72,31 km/h ✓CA	1C expressing time in hours 1CA answer (2)	M L2
3.6	✓A ✓A 29 August	1A Date 1A Month (2)	M L1
		[25]	

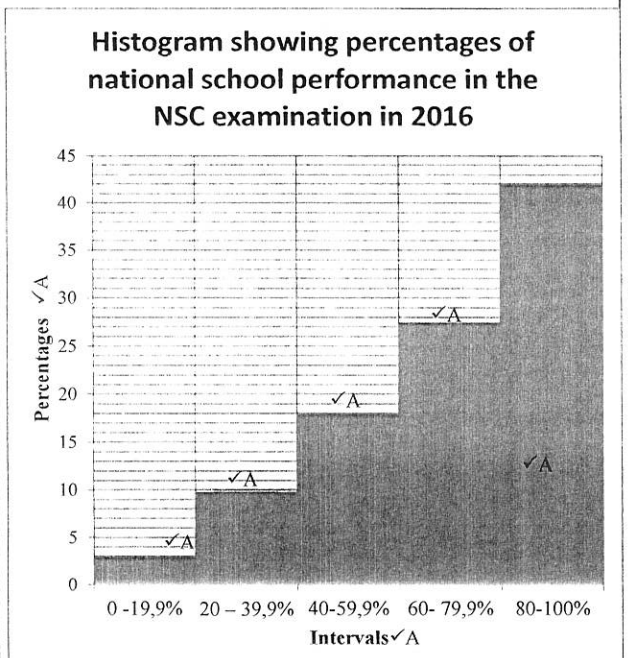
QUESTION 4 [24 MARKS]					
4.1.1	Total number of learners = 18 × 2 ✓MA = 36 ✓CA	1MA 1CA	multiplying 18 by 2 answer **AO**	(2)	M&P L1
4.1.2	Right ✓✓A	2A	answer	(2)	M&P L1
4.1.3	One unit on the plan represents eighty units in reality ✓✓E **OR** The information shown on the plan is eighty times smaller than in real life. ✓✓E	2E	explanation	(2)	M&P L1
4.1.4	Length 1 : 80 14,2 cm = Length Length = 1 136 cm ✓M Length = 1 136 cm ÷100 ✓C Length = 11,36 m ✓A Width 1 : 80 12,1 cm = Width Width = 968 cm ✓M Width = 968 cm ÷ 100 ✓C Width = 9,68 m ✓A **OR** 1 : 80 Length on plan (m) = $\frac{14,2\text{ cm}}{100}$ ✓C = 0,142m Actual Length = 0,142 m x 80 ✓M = 11,36 m ✓A	1M 1C 1A 1M 1M 1A 1C 1M 1A	multiplying 14,2cm by 80 cm converting to m answer multiplying 12,1cm by 8 cm converting to m Answer converting to m multiplying 0,142m by 80 answer		M&P L1

	Width on plan (m) = $\frac{12,1\text{cm}}{100}$ ✓C = 0,121 m Actual width = 0,121 m x 80 ✓M = 9,68 m ✓A	1C 1M 1A	converting to m multiplying 0,121m by 80 answer	(6)	
4.2.1	1,4 cm : 100 miles 6,9 cm : miles ✓M Distance = $\frac{690}{1,4}$ ✓M = 492,86 miles ✓A **OR** Distance= $\frac{100\text{ miles}}{1,4}$ ✓M = 71,42857143 71,42857143× 6,9 ✓M Distance = 492,86 miles ✓A	1M 1M 1A 1M 1M 1A	multiplying 100 by 6,9 dividing by 1,4 answer dividing by 1,4 multiplying 100 by 6,9 answer	(3)	M&P L2
4.2.2	1 mile = 1,6 km 492,86 miles = km ✓M = 492.86 × 1.6 km = 788,58 km ✓CA	1M 1CA	multiplying 492,86 by 1,6 answer	(2)	M&P L2
4.2.3	South East or SE ✓✓A	2A	answer	(2)	M&P L1
4.2.4	Table Mountain National Park ✓✓RM	2 RM	reading from the map	(2)	M&P L1
4.2.5	Pretoria - Administrative country capital ✓A Bloemfontein – Judicial country capital ✓A Cape Town – Legislative country capital ✓A	1A	× 3	(3)	M&P L2
				[24]	

QUESTION 5 [43 MARKS]

5.1.1	Total number of learners = 316 + 360 + 47 + 173 + 405 + 213 ✓M = 1 514 ✓A	1M 1A	adding correct values answer **AO**	(2)	DH L1
5.1.2	Total female learners = 189 + 102 + 66 = 357 ✓MA % female learners = $\frac{189}{357} \times 100\%$ ✓M = 52.94 % ✓CA ≈ 53 % ✓R **OR** % female learners $\frac{189}{357}$ ✓MA $\times 100\%$ ✓M = 52.94 % ✓CA ≈ 53 % ✓R	1MA 1M 1CA 1R 1MA 1M 1CA 1R	total no. of female learners concept of % answer rounding total no. of female learners concept of % answer rounding	(4)	DH L2
5.1.3	Total No. of learners = 316+189+22+102 +312+66+213+405+173+47+360+150 ✓MA = 2 355 ✓A P (male dishing at school) = $\frac{466}{2\,355}$ ✓M = 0,1979 ✓CA **OR** P (male dishing at school) = $\frac{466}{2355}$ ✓MA ✓A = $\frac{466}{2\,355}$ ✓M = 0,1979 ✓CA	1MA 1A 1M 1CA 1MA 1A 1M CA **N P R**	adding correct values answer dividing by 2 355 answer adding correct values answer dividing by 2 355 answer	(4)	P L2

5.2.1	No. of schools which achieved from 40 – 59,9% ✓RT = $\frac{6,5}{100} \times 400$ ✓M = 26 ✓CA **OR** ✓M = $\frac{93,5}{100} \times 400$ = 374 400 – 374 ✓M = 26 ✓CA	1RT 1M 1CA 1M 1M 1CA	reading the correct % from the table multiplying by 400 answer multiplying by 93,5% subtracting 374 from 400 answer	(3)	DH L1
5.2.2	KwaZulu Natal ✓✓A	2A	answer	(2)	DH L1
5.2.3	Eastern Cape : Gauteng 925 : 875 ✓RT 925 (÷ 25) : 875 (÷ 25) 37 : 35 ✓A	1RT 1A	reading correct values answer	(2)	DH L2

5.2.4		4A For any four correct bars 1A For horizontal axis label 1A For vertical axis label 1A For bars touching each other (7)	DH L2
5.2.5	P (achieved 60 – 79,9% in KZN) = $\frac{486✓A}{1745✓A}$ = 0,278510028 ≈0,28 ✓R	1A numerator 1A denominator 1R rounding (3)	P L2

5.3.1 (a)	Mean weight for 12A = $\frac{50+48+55+....+60}{20}$ ✓M = $\frac{1082}{20}$ ✓M = 54,1 ✓A	1M adding all values 1M dividing by 20 1A answer (3)	DH L2
(b)	Modal weight for 12B = 51 ✓✓A	2A answer (2)	DH L2
(c)	Median for 12C = 43; 47; 48,1 ; 49; 50 ; 52 ; 53,1 ; 53,6 ; 54 ; 56 ; 56,2 ; 57 ; 60 ; 60 ; 61 ; 61 ; 63 ; 63 ; 65 ; 65 ✓M = $\frac{56+56,2}{2}$ ✓M = 56,1 ✓A	1M identifying 56 and 56,2 1M dividing by 2 1A answer (3)	DH L2
5.3.2 (a)	Q1 = $\frac{50+52}{2}$ = 51 ✓✓A Q3 = $\frac{61+61}{2}$ = 61 ✓✓A	2A answer 2A answer (4)	DH L1
(b)	Interquartile range = 61 – 51 ✓M = 10 ✓CA	1M IQR concept 1CA answer (2)	DH L1
5.3.3	Range for 12A = 62 – 43 ✓✓M = 19kg	2M Range Concept (2)	DH L1
		[43]	

TOTAL MARKS: 150