KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY

COMMON ASSESSMENT TASK

MARCH 2025

MARKS: 75

TIME: 1 ½ hours

This question paper consists of 8 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. Start EACH question on a NEW page.
4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
5. Show ALL calculations clearly.
6. Round off ALL final answers appropriately to two decimal places, unless stated otherwise.
7. Indicate units of measurement, where applicable.
8. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

1.1

The municipality recently opened a park and collected the information so as know the number of people who visit the park.

The graph showing the number of people who visited the park

[Adapted from www.bing.com]

Use the graph and the information above to answer the questions that follow.

1.1.1 Write down the day where the most people visited the park. (2)

1.1.2 Name the data collection method that was used to collect the data above? (2)

1.1.3 Calculate the range of the number of people who visited the park. (2)

1.1.4 Determine the number of days where people who visited the park were less than 80. (2)

1.1.5 Identify the dependent and the independent variables of the graph. (2)

1.1.6 Is the number of people discrete or continuous? (2)

1.1.7 Write 60, the number of people who visited the park on Wednesday, in dozens. (2)

1.2

The municipality needs an average of 5 000 liters of water in the park per month. The municipal truck can transport 2 500 liters per trip.

NOTE: 1 litre = 1 000 millilitres

Use the information above to answer the questions that follow.

1.2.1 Convert 5 000 litres to millilitres. (2)

1.2.2 State whether 2 500 litres per trip is a rate or a ratio. (2)

1.2.3 Determine the number of trips the truck needs to make to transport a total of 5 000 litres. (2)

[20]

QUESTION 2

2.1 A total of 340 learners wrote Mathematical literacy in 2024 and 4 markers marked the scripts.

Use the information above to answer the questions that follow.

2.1.1 Write 340 in words. (2)

2.1.2 Round-off 340, the number of learners that wrote Mathematical literacy to the nearest hundred. (2)

2.2 On day 1 a total number of 50 scripts were marked.

Table 1: NUMBER OF SCRIPTS MARKED PER DAY

Number of days	1	2	3	4	5	6	7
Number of scripts marked	50	100	150	200	250	300	340

Use the information above to answer the questions that follow.

2.2.1 Identify and describe the pattern in the data, represented in the table above. (3)

2.2.2 One of the learners stated that the number of scripts marked in day 3 is $\frac{3}{4}$ of the number of scripts marked in day 4. Verify, by showing calculations if the statement is valid. (3)

2.2.3 Write the ratio of the number of scripts marked on day 1 to the number of scripts marked on day 7 in simplest form. (3)

2.3 If each teacher marks 50 scripts per day, show by calculations that it will take approximately 2 days to finish marking all 340 scripts. (4)

[17]

QUESTION 3

3. Some boys in Miss Zwane's class stated that boys are naturally more fit than girls. Miss Zwane decided to conduct an experiment to test the boys' claim. Her class has a total of 27 learners.

She separated the girls and boys into two groups, and made each group do a series of push-ups, sit-ups and short sprints. She then allowed them to rest for two minutes, before taking a reading of their heart rate.

Table 2 below contains the heart rate readings that Miss Zwane collected from the two groups.

Table 2: HEART RATE READINGS OF GIRLS AND BOYS

GROUP 1: GIRLS		**GROUP 2: BOYS**	
Name	Heart rate reading (beats per minute – bpm)	Name	Heart rate reading (beats per minute – bpm)
Ayanda	91	Milo	52
Camilla	96	Bobby	118
Claire	77	Xolani	50
Luna	77	Joe	84
Siphokazi	71	Phillip	105
Megan	72	Simon	90

[Adapted from www.testbook.com

NOTE: A lower heart rate implies a higher fitness level

Use Table 2 and the information above to answer the questions that follow.

3.1 Write down the name and heart rate of the fittest person in the class. (2)

3.2 Determine the modal heart rate for the above data (2)

3.3 Calculate the mean heart rate for the girls (Group 1). (3)

3.4 Determine the number of learners in the table whose heart rate reading is above 90. (2)

3.5 Calculate the median heart rate for the boys (Group 2) (3)

3.6 Examine the collected data and decide whether the mean or the median, gives the best indication of which group has the best overall fitness. Explain your answer. (2)

3.7 Mention one reason why the boys claim that they are fitter than the girls? (2)

3.8 Write down the number of learners that represent the sample size as a percentage of the number of learners that represent the population size for this investigation. (4)

[20]

QUESTION 4

4.

The principal collected data about the students in his school who are under the age of 18 years and who drink alcohol. On a Tuesday and Wednesday at 1 pm, he collected the data. Table 3 is a tally table containing the data that he collected from the school.

Table 3: TALLY TABLE SHOWING DATA OF UNDERAGE DRINKING

Grade	Number of students surveyed in each grade	Boys under the age of 18 years who drink alcohol	Girls under the age of 18 years who drink alcohol
8	50	𝍸 ||||	|||
9	50	𝍸 𝍸 ||||	||||
10	50	𝍸 𝍸 ||||	𝍸 𝍸 ||
11	50	𝍸 𝍸 𝍸 ||||	𝍸 𝍸 𝍸 𝍸
12	50	𝍸 𝍸 𝍸 𝍸 ||||	𝍸 𝍸 𝍸 𝍸 ||||

SUMMARY OF RESULTS		
Total students surveyed	**Total underage boys**	**Total underage girls**
250	80	63

[Adopted www.aware.org]

Use the information above to answer the questions that follow.

4.1 Write the time that the principal starts collecting the information in 24-hour format. (2)

4.2 Show by calculations that the difference between the number of grade 8 and grade 9 boys under the age of 18 years who drink alcohol is 5. (4)

4.3 How many students surveyed in Grade 8 do not drink alcohol? (3)

4.4 According to aware.org, 50% of all teenagers in South Africa drink alcohol on a regular basis.
Compare this figure to the results of the principal's survey and make a conclusion about whether you think there is a problem with underage drinking at his school (3)

4.5 Show that the total percentage of underage boys drinking alcohol is 32% of total number of students surveyed. (2)

4.6 Give TWO possible reasons why most of the learners who drink alcohol are among grades 10 to 12. (4)
[18]

TOTAL: 75

FINAL

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MARKING GUIDELINE

MARKS: 75

SYMBOL	EXPLANATION
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy (Answer)
C	Conversion
S	Simplification
RT	Reading from a table/ graph/ diagram
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example
P	Penalty e.g., for no units, incorrect rounding off, etc.
NPR	No penalty for correct rounding
NPU	No penalty for omitting unit, but wrong unit is penalised
AO	Answer only

This marking guideline consists of 5 pages.

NOTE:

- If a learner answers a question TWICE, only mark the FIRST attempt.
- If a learner has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error or breakdown.
- If the learner presents extra solution when reading from the graph, table, layout plan and map, then penalise for every extra item presented.
- Rounding is an independent mark.
- General principle of making, if the candidate makes one mistake one mark is deducted.
- A conclusion mark can only be given if relevant calculations of at least $\frac{1}{3}$ of the maximum mark of the sub-question has been awarded.
- No penalty for rounding (NPR) if the first decimal is correct, except questions involving money.

QUESTION 1 [20] ANSWER ONLY FULL MARKS			
Q	**Solution**	**Explanation**	**T&L**
1.1.1	Saturday✓✓RT	2RT correct day (2)	B L1 E
1.1.2	Observation✓✓A	2A correct method **ACCEPT Survey** (2)	D L1 M
1.1.3	Range = 140 −60✓MA = 80 ✓A	1MA subtracting correct values 1A simplification (2)	D L1 E
1.1.4	3 days✓✓A	2A correct answer (2)	B L1 E
1.1.5	Independent = days of the week✓A Dependent = number of people✓A	1A correct answer 1A correct answer (2)	B L1 E
1.1.6	Discrete✓✓A	2A correct option (2)	D L1 E
1.1.7	Dozen = $\frac{60}{12}$✓MA = 5✓A	1MA dividing correct values 1A simplification (2)	B L1 M
1.2.1	= 5 000 x 1000✓C = 5 000 000 millilitres ✓A	1C multiplying by 1000 1A correct answer (2)	B L1 E

1.2.2	Rate✓✓A	2A correct option (2)	B L1 E
1.2.3	Number of trips $=\frac{5\,000}{2\,500}$✓MA $=2$ ✓A	1MA dividing correct values 1A simplification (2)	B L1 M
			[20]

QUESTION 2[17 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
2.1.1	Three hundred and forty✓✓A	2A correct amount in words (2)	B L1 E
2.1.2	300✓✓R	2R correct rounding (2)	B L2 M
2.2.1	Linear pattern✓A ✓O As the number of days increase the number of scripts marked also increases✓O	1A correct answer 1O number of days increase 1O number of scripts marked increases (3)	B L3 M
2.2.2	Number of scripts marked $=\frac{3}{4}$ x 200✓MA $=150$✓A The statement is valid✓O **OR** Number of scripts marked = 75% x 200 ✓MA = 150✓A The statement is valid✓O **OR** $\frac{150}{200}$✓RT✓MA $=\frac{3}{4}$ The statement is valid✓O	1MA multiplying correct value 1A simplification 1O conclusion 1MA multiplying 75% by 200 1A simplification 1O conclusion (3) 1RT reading correct values 1MA dividing correct values 1O conclusion (3)	B L4 M
2.2.3	✓RT 50: 340✓MA 5: 34✓A	1RT correct values 1MA correct order 1A simplification (3)	B L2 M

2.3	Number of scripts marked per day by 4 markers = 50 x 4 = 200✓A Number of days to mark the scripts $=\frac{340}{200}$✓MA = 1,7✓CA ≈ 2 days✓R	1A simplification 1MA dividing correct values 1CA simplification 1R rounding (4)	B L3 D
			[17]

QUESTION 3 [20 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
3.1	Xolani ✓A 50 ✓A	1A correct name 1A correct heart rate (2)	D L1 D
3.2	77✓✓A	2A correct modal (2)	D L2 E
3.3	Mean (Group 1) $=\frac{91+96+77+77+71+72}{6}$✓MA ✓MA $=\frac{484}{6}$ = 80,67✓CA	1MA concept of a mean 1MA dividing 6 1CA simplification (3)	D L2 M
3.4	Total number = 4✓✓A	2A correct number (2)	D L1 E
3.5	Median = 50, 52, 84, 90, 105, 118✓MA $=\frac{84+90}{2}$ ✓MA = 87✓A	1MA arranging values correctly 1MA dividing correct values 1A simplification (3)	D L2 M
3.6	Median ✓A Not affected by the outlier✓O	1A correct average 1O reason (2)	D L4 M
3.7	Two of the six boys tested have the lowest heart rate reading ✓✓O	2O correct explanation (2)	D L4 M
3.8	Percentage Sample ✓RT $=\frac{12}{27}$ x 100% ✓MA ✓RT = 44,44% ✓A	1RT numerator 1MA multiplying by 100% 1RT denominator 1A simplification (4)	D L3 M
			[20]

QUESTION 4[18 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
4.1	13:00✓✓A	2A correct answer (2)	D L2 E
4.2	Number of boys in grade 8 = 9✓RT Number of boys in grade 9 = 14✓✓RT Difference = 14 – 9✓MA = 5	1RT number of boys in grade 8 2RT number of boys in grade 9 1 MA subtracting correct values (4)	D L2 M
4.3	Number of students ✓RT = 50 – 12✓MA = 38✓CA	 1RT reading correct values 1MA subtracting correct values 1CA correct answer (3)	D L2 M
4.4	✓MA 143 learners out of 250 learners drink alcohol which is ✓MA 57,2% and above the average SA teenagers in all School who drink alcohol indicates a serious concern.✓O	1MA calculating 143 1MA for 57,2 1O correct explanation (3)	D L4 D
4.5	✓RT = $\frac{80}{250}$ x 100%✓MA = 32%	1RT correct values 1MA multiplying by 100% (2)	D L3 D
4.6	Peer pressure✓✓O Stress from studies✓✓O Ill-discipline✓✓O Youth experimenting✓✓O Duplicating elders' behaviour✓✓O Eco-social challenges✓✓O Lack of parental care/guidance✓✓O	2O each correct explanation for maximum two answers (4)	D L4 D
			[18]
			TOTAL MARKS:75