education

Department:
Education
PROVINCE OF KWAZULU-NATAL

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY P1

COMMON TEST

JUNE 2019

MARKS: 50

TIME: 1 hour

This question paper consists of 6 pages and an addendum with 1 annexure (2 pages).

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions. Answer ALL the questions.
2. Use ANNEXURE A in the addendum to answer QUESTION 3.1.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL the calculations clearly.
7. Round off ALL the final answers to TWO decimal places, unless stated otherwise.
8. Indicate units of measurements, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

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QUESTION 1

1.1 Study the table below showing TWO types of calculators donated to Woodlands High School and answer the questions that follow.

Table 1 : Number of calculators donated to Woodlands High School

GRADE	HARPS	SOCIA	TOTAL
GR 10	23	**A**	**52**
GR 11	36	29	**65**
GR 12	24	26	**50**
TOTAL	**B**	**84**	**167**

1.1.1 How many calculators were donated to the school altogether? (2)

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

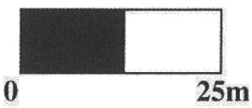
1.1.3 Express as a common fraction the number of grade 11 SOCIA calculators to the total number of donated calculators in the school. (2)

1.2 Miss Nkosi teaches map scale in her grade 10 Mathematical Literacy class. Use figure 1 and figure 2 below to answer the questions that follow.

Figure 1

1 : 25

Figure 2



1.2.1 Write down the name of each scale in figure 1 and figure 2. (2)

1.2.2 Which of the following statement best describe a scale in figure 2.

A. One segment of the scale measures 25 units in reality.

B. One unit on the map represents twenty-five units in reality.

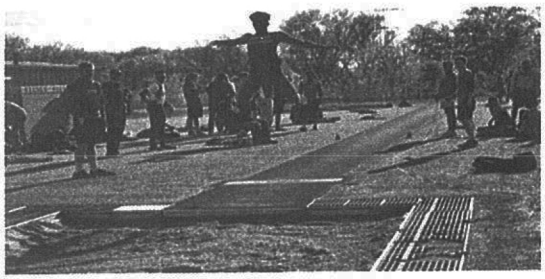
C. If the map is resized the scale remains accurate. (2)

[12]

QUESTION 2

2.1 A school around Mkhomazi is conducting athletic selection for the Long Jump field event. The officials did not have the necessary measuring instruments. Mr Queen one of the officials, used the "rule of thumb" to estimate measurements for the field events.

Picture of long jump



Source//www.google.com/images

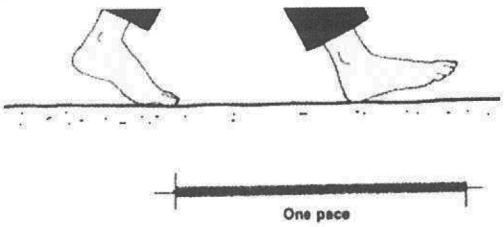
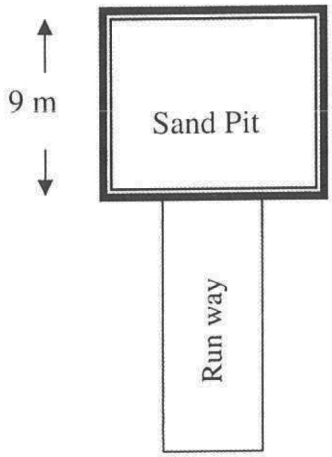


Diagram of long jump Pit and run way



NOTE:
One wheel barrow = 50*l*
One pace ≈ 0,9*m*

- A pace is defined as one step between two feet
- Rule of thumb – an egyptian method of using body parts to estimate measurements

Study the diagram and the information above to answer the following questions

2.1.1 Determine the number of paces Mr Queen will take to measure the length of the sand pit. (

2.1.2 The soil removed from the sand pit area is approximately 400*l* of sand. How many wheel barrows were loaded to remove the soil? (2)

2.1.3 Mr Queen buys energy sport drink sachets, ONE sachet mixes with 750ml of water.

Determine the number of energy sport drink sachets required to dilute into 10 000 millilitres of water. (3)

2.1.4 Mr Queen divides the winning prize money in a ratio of **3: 2: 1** for the winner, runner up and third place athlete.

Calculate how much the winner will get if the total price money is R2 000. (3)

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2.2 During the day of athletic selection the weather report was recorded as follows on the weather focus.

Table 2: Weather report on 19.03.2019

Chances of Rain	Wind speed	Cloud cover	Maximum Temperature
10%	17km/h	Clear	28 °C

Source: M,accuweather.com

2.2.1 Write down the month in which the Athlete selection was conducted. (2)

2.2.2 The event started at 09:00am and finished at 04:30pm. Determine the duration of the event in hours and minutes. (2)

2.2.3 What is the probability that it will NOT rain during the day of the event? (3)

2.2.4 The contingency table below illustrates outcomes on weather prediction.

	Windy	No Wind	Hail
Rain	....	**B**	**C**
No Rain	**A**	No Rain, No Wind	....

Determine the missing outcomes **A**, **B** and **C**. (3)

[20]

QUESTION 3

3.1 The map illustrating the different layouts of a school in 1985 and in 2019 is given on ANNEXURE A in the addendum. Study the layouts and answer the following questions.

3.1.1 Write down the ratio, in a simplified form, for the number of teachers to the number of learners in 1985. (2)

3.1.2 Hence or otherwise, determine the difference in the number of teachers in 1985 and 2019, if the ratio teacher: learner remains the same. (5)

3.1.3 If there were 20 male teachers in the school during 1985, express the number of male teachers as a percentage of all teachers in the school in 1985. (2)

3.1.4 The school was established 10 years before 1985. How old will the school be in 2019? (3)

3.2 The school has been improving on its buildings and fields to a new layout.

3.2.1 Identify TWO features from the layout that were reduced to a smaller size. (2)

3.2.2 Name the feature from the layout which indicates that there was an increase in the number of learners in the school from 1985 to 2019. (2)

3.2.3 Write down the position of the fitness centre in relation to the pool and fields. (2)

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TOTAL: 50

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MATHEMATICAL LITERACY P1

ADDENDUM

COMMON TEST JUNE 2019

NATIONAL SENIOR CERTIFICATE

GRADE 10

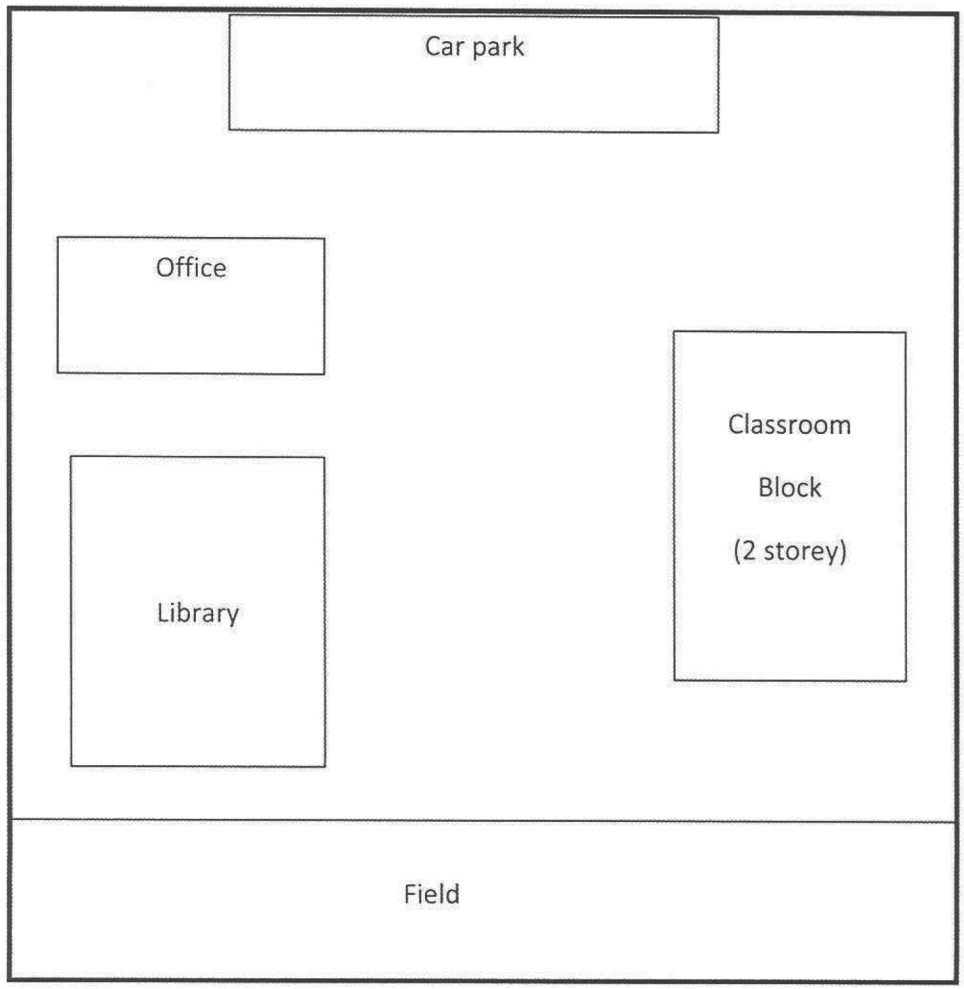
This addendum consists of 2 pages with 1 annexure.

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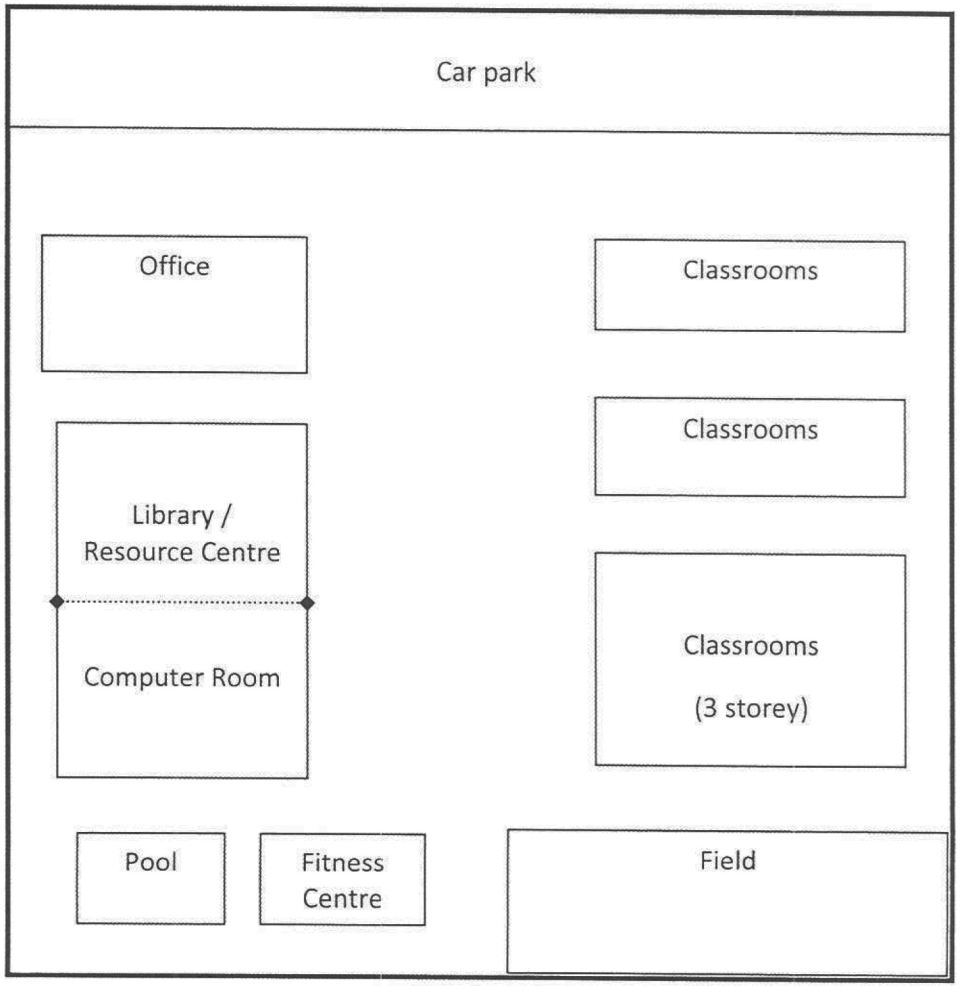
ANNEXURE A

Question 3.1

School in 1985 (1 500 learners with 50 teachers)



School in 2019 (2 300 learners)



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MLIT GRADES 10 & 11

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MARKING GUIDELINE

NATIONAL SENIOR CERTIFICATE

GRADE 10

MARKS: 50

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

This marking guideline consists of 4 pages.

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QUESTION 1 [12MARKS]			
QUE	**Solution**	**Explanation**	**TL**
1.1.1	167 ✓✓RT	2RT, Answer (2)	B L1
1.1.2	✓MA A = 52- 23 = 29✓A **OR** ✓MA A = 84- 26- 29 = 29✓A ✓MA B = 167 – 84 = 83✓M **OR** ✓MA B = 23 + 36 + 24 = 83✓A	1MA, Subtracting correct values 1A, Answer **OR** 1MA, Subtracting correct values 1A, Answer 1MA, Subtracting correct values 1A, Answer **OR** 1MA, Adding correct values 1A, Answer **AO** (4)	B L1
1.1.3	Common fraction = $\frac{29}{167}$ ✓A ✓A	1A, Numerator 1A, Denominator (2)	B L1
1.2.1	Fig. No.1 = Ratio scale or Number scale ✓A Fig. No.2 = Bar scale ✓A	1A, Answer 1A, Answer (2)	MP L1
1.2.2	C ✓✓A	2A, Answer (2)	MP L1
		[12]	

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QUESTION 2 [20 MARKS]

QUE	Solution	Explanation	TL
2.1.1	Number of pace = $\frac{9m}{0,9m}$ ✓M = 10 ✓A	1M, Dividing 9m by 0,9m 1A, Number of paces **AO** (2)	M L2
2.1.2	Number of Loads = $\frac{400\,l}{50l}$ ✓M = 8 wheel barrows ✓A	1M, Dividing 400*l* by 50*l* 1A, Number of loads **AO** (2)	M L2
2.1.3	Number of sachets = $\frac{10\,000\,ml}{750\,ml}$ ✓M = 13,333 ✓A = 14 ✓R	1M, Dividing 10 000*ml* by 750*ml* 1A, Answer 1R, Rounding up (3)	M L2
2.1.4	✓M Winner's Prize = $\frac{3}{6} \times R2\,000$ ✓MA = R1 000 ✓A	1MA, Ratio concept 1M, Multiplying by R2 000 1A, Answer (3)	F L2
2.2.1	March ✓✓RT	2RT, Answer (2)	M L1
2.2.2	Duration = 16:30 – 9:00 ✓M = 7 hours and 30 minutes ✓A **OR** Duration = 4:30pm – 9:00am ✓M = 7 hours and 30 minutes ✓A	1M, Subtracting times 1A, Duration **OR** 1M, Subtracting times 1A, Duration (2)	
2.2.3	P(no rain) = $\frac{100\% - 10\%}{100\%}$ ✓A = $\frac{9}{10}$ ✓A **OR** P(no rain) = 0,9 ✓✓✓A **OR** P(no rain) = 90% ✓✓✓A	1A, Numerator 1A, Denominator 1A, Answer **AO** (3)	P L2
2.2.4	A = No rain, Windy ✓A B = Rain, No wind ✓A C = Rain, Hail ✓A	1A, Correct outcome 1A, Correct outcome 1A, Correct outcome (3)	P L1
		[20]	

QUESTION 3 [18 MARKS]

QUE	Solution	Explanation	TL
3.1.1	50 : 1 500 ✓MA 1 : 30 ✓S	1MA, Correct ratio and order 1S, Simplification **AO** (2)	B L1
3.1.2	Number of teachers in 2019 = $\frac{1}{30} \times 2\,300$ ✓M = 76,666 ✓S ≈ 77 ✓CA Difference of teachers = 77 – 50 ✓MA = 27 ✓CA **OR** Number of teachers in 2019 = $\frac{2\,300}{1\,500} \times 50$✓M = 76,666✓S ≈ 77 ✓CA Difference of teachers = 77 – 50 ✓MA = 27 ✓CA	1M, Ratio concept 1S, Simplification 1CA, Number of teachers in 2019 1MA, Subtraction 1CA, Answer **OR** 1M, Ratio concept 1S, Simplification 1CA, Number of teachers in 2019 1MA, Subtraction 1CA, Answer (5)	B L3
3.1.3	Male % teachers = $\frac{20}{50} \times 100\%$ ✓M = 40% ✓A	1M, Percentage concept 1A, Answer **AO** (2)	B L1
3.1.4	Year school established = 1985 – 10✓M = 1975✓A School age = 2019 – 1975 = 44 years ✓CA **OR** ✓M School age = (2019 – 1985) + 10 ✓M = 44 years ✓CA	1M, Subtracting 10 years 1A, Year school established 1CA, School age **OR** 1M, Subtracting 1985 1M, Adding 10years 1CA, Period (3)	M L1
3.2.1	Field ✓A Library ✓A	1A, Answer 1A, Answer (2)	MP L1
3.2.2	Classrooms ✓✓A	2A, Answer (2)	MP L1
3.2.3	It is between the pool and field. ✓✓A **OR** Right of the pool. ✓✓A **OR** Left of the field. ✓✓A	2A, Answer (2)	MP L1
		[18]	

TOTAL: 50