KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY

COMMON TEST

APRIL 2021

MARKS: 75

TIME: 1 ½ hours

This question paper consists of 7 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 to two decimal places.
7. Indicate units of measurement, where applicable.
8. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

Zenande is a trainer of Ezidulini school netball team and they train every Saturday. She encourages her players to keep running every day during the week and recorded their starting times in the table below. The earliest starting time is on the 15th and the latest is on the 16th of April 2020.

Table 1: Showing record of staring times for each netball team player

Player	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Starting time	10:00	12:15	18:30	00:15	04:49	19:59	20:00

1.1 Use the information above to answer the following questions.

1.1.1 Calculate the difference between the 20:00 and 00:15. (2)

1.1.2 Which player started at eight o'clock in the evening? (2)

1.1.3 Write the time shown for **F** in 12-hour units (Analog) (2)

1.1.4 Calculate the difference of hours between **E** and **B**. (2)

1.1.5 Player **E** claims that she started running 4 hours and 34 minutes later than player **D**. Is the statement correct? (2)

1.2 Player **A** finished her training in 1:17:15

1.2.1 State what does each digit represents. (3)

1.2.2 The runner finished 25 minutes and 03 seconds slower than her previous time. What was her previous time? (2)

1.2.3 Why do you think some players choose to do their running at night? (2)

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QUESTION 2

2.1

Tommy buys doughnuts which are sold in dozen at a price of R114.00 as show in the picture below at Madresini Shop.

[Source: www.shutterstock.com]

Use the information above to answer the following questions:

2.1.1 How many doughnuts are in a dozen? (2)

2.1.2 Tommy needs to buy 56 doughnuts, determine the number of dozens of doughnuts she will buy. (3)

2.1.3 Doughnuts are packed in two dozen per box. How many boxes are needed to pack 56 doughnuts? Round off your answer to the nearest whole number. (3)

2.1.4 If a dozen of doughnuts cost R114.00, give the price per doughnuts in a ratio form. (2)

2.2 Tommy sends two players to buy water and drinks and she divided the amount of R1800 in a ratio of 9:6.

2.2.1 Determine how much is each item budgeted for? (3)

2.2.2 Simplify the ratio given above to its simplest form. (2)

[15]

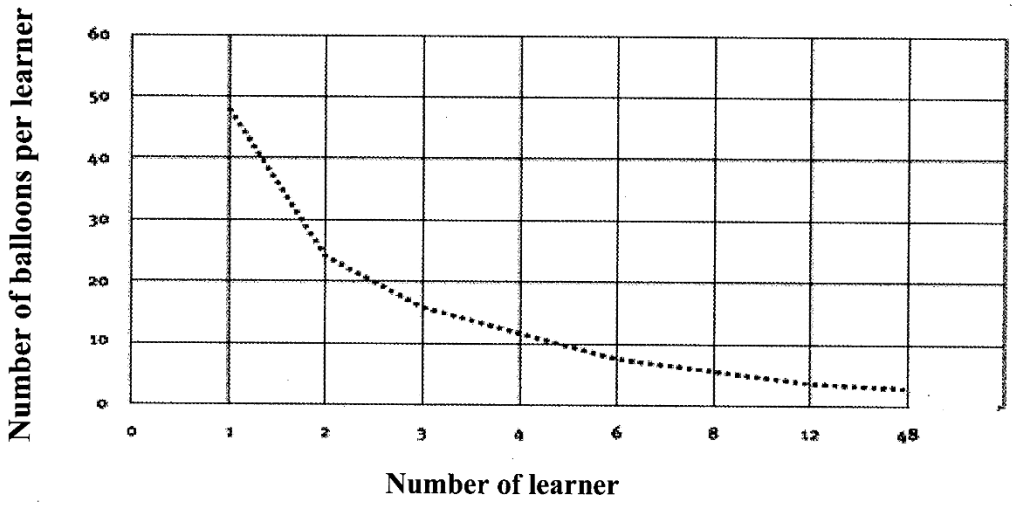
QUESTION 3

3.1

The principal of the Konfoor School organised a welcoming party to celebrate the victory of the netball team. His school got position one out of 1 456 schools that participated. The school bought balloon and gave it to the learners who made guard of honour for the team on their arrival.

TABLE 2: Show the number of balloons given to each learner.

Number of learners	**1**	**2**	**3**	**4**	**6**	**B**	**12**	**16**	**24**	**48**
Number of balloons per learner	48	24	16	A	8	6	4	3	2	1



Use the information above to answer the following questions:

3.1.1 What type of a relationship is shown by the graph? Give a reason for your answer. (4)

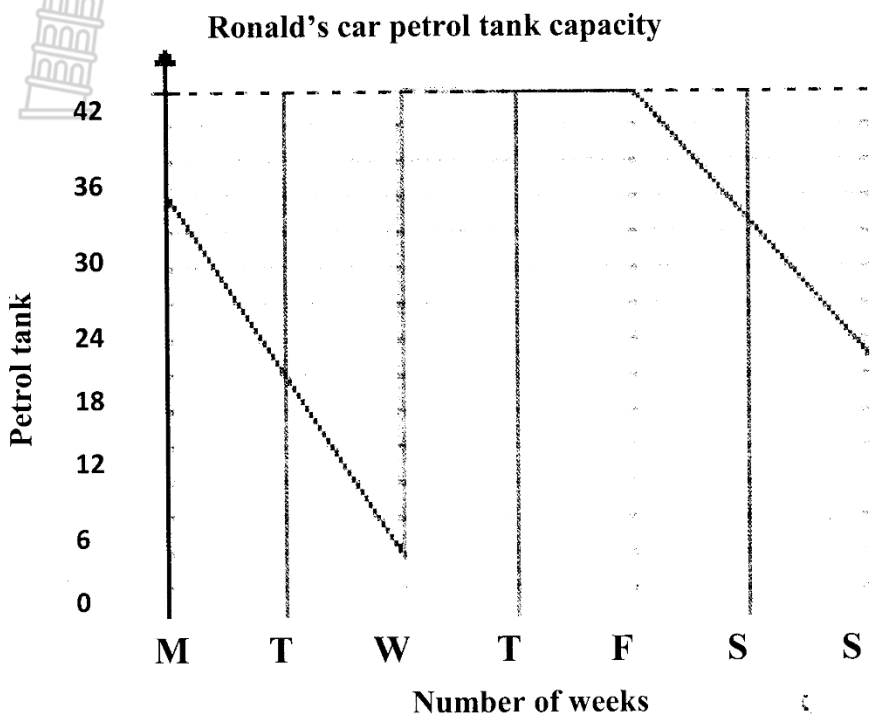
3.1.2 What happens to the number of balloons, if the number of learners increases? (2)

3.1.3 Calculate the value of **A** and **B**. (4)

3.1.4 Write the number of schools that participated in the competition in words. (2)

3.2

Ronald is a school driver. The car he uses at school has a petrol tank capacity of 45 litres. The graph below shows the amount of petrol in the tank over a week. During the week, he took a one-day leave.



Use the graph above to answer the following questions:

3.2.1 Which variable is the independent variable? (2)

3.2.2 Which day is the petrol capacity at its lowest and how much petrol is in the car this day? (4)

3.2.3 How many day does Ronald's week consist of? (2)

3.2.4 Ronald tells his colleagues that he fills up the car with petrol once a week. Is his statement correct? Give a reason for your answer. (3)

[23]

QUESTION 4

4.1

Ms. Khanyisile Radebe is a Grade 10 Mathematical Literacy teacher, recorded the results (as a percentage) of class test as follows:

TABLE 3: Grade 10 class test results in percentage

56	58	38	70	30	56	67	85	32	25
58	35	74	67	84	30	76	58	35	29

Use the information above to answer the following questions:

4.1.1 Which is the best suitable method of collecting the information above. (2)

4.1.2 State with a reason if the data collected above is discrete or continuous. (3)

4.1.3 Determine the median percentage of the class. (3)

4.1.4 Calculate the modal percentage of the class. (2)

4.1.5 Calculate the range of the results. (3)

4.1.6 The mean percentage results for the learners is 53, 15. Show how this value was calculated. (2)

4.2

Learner's performance is summarized using a rating code.

The results of the Grade 10 Mathematical Literacy learners in Ms. Radebe's class is summarized below in TABLE 4. The pass level is from level code 2.

TABLE 4: Level code with summary of learners' performance

Level code	Percentage range	No of learners
7	80–100	1
6	70–79	2
5	60–69	1
4	50–59	1
3	40–49	2
2	30–39	5
1	0–29	8

Use the table above to answer the following questions:

4.2.1 Determine the percentage range that is Level code 7. (2)

4.2.2 Miss Radebe is not happy about the performance of the learners that passed. Do you think her unhappiness is correct? Give a reason for your answer. (3)

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TOTAL MARKS: 75

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MARKING GUIDELINE

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

This marking guideline consists of 5 pages.

QUESTION ONE [17 MARKS]			
Que	**Solution**	**Explanation**	**T&L**
1.1.1	Difference = 20:00 – 00:15✓ M = 19h 45min✓ A	1M subtracting correct times 1A answer **AO** (2)	B LI
1.1.2	G ✓✓ A	2A answer (2)	B LI
1.1.3	7:59 pm✓✓ A	2A answer (2)	B LI
1.1.4	Hours =12: 15 to 04: 15 ✓ M = 16 ✓ A	1M subtraction 1A answer **AO** (2)	B LI
1.1.5	Yes✓✓ A	2A answer (2)	B LI
1.2.1	1= hour /hr ✓A 17=minutes /min✓A 15= seconds /sec✓ A	1A answer 1A answer 1A answer (3)	B LI
1.2.2	Time = 1:17:15 – 00:25:03 ✓ M = 00:52:12✓A	2M subtraction 1A answer **AO** (2)	B LI
1.2.3	Cooler ✓✓ O **OR** Working during the day✓✓ O **OR** Any valid reason	2O opinion (2)	B LI
		[17]	

QUESTION TWO [15 MARKS]			
Que	**Solution**	**Explanation**	**T&L**
2.1.1	12 ✓✓A	2A answer (2)	B L1
2.1.2	No of dozens $=\frac{56}{12}$ ✓MA $=4.667$✓ S $\approx$ 5 dozens✓ R	1MA dividing by 12 1S simplification 1R rounding (3)	B L3
2.1.3	No of boxes $=\frac{56}{24}$ ✓M $=2.33$✓ S $\approx$ 3 boxes✓ R	1M dividing by 24 1S simplification 1R rounding (3)	B L3
2.1.4	Cost per doughnut $=\frac{R\ 114,00}{12}$ ✓MA $=$ 1: 9.50✓A	1MA dividing by 12 1A answer (2)	B L2
2.2.1	Water $=\frac{9}{15}\times 1800$✓ M $=$ 1080 ✓S Drinks = R1800 – R1080 = R 720 ✓ CA **OR** Drinks= $\frac{6}{15}$x1800 ✓M =R720✓S Water = R1800 –R720 =R1080✓CA	1M multiplying by $\frac{9}{15}$ 1S simplification 1CA answer **OR** 1M multiplying by $\frac{6}{15}$ 1S simplification 1CA answer (3)	B L3
2.2.2	Ratio $=\frac{9}{3}:\frac{6}{3}$ ✓ M $=$ 3:2✓ A	1M dividing both sides by 3 1A answer (2)	B L2
		[15]	

QUESTION 3 [23 MARKS]			
Quest	**Solution**	**Explanation**	**T&L**
3.1.1	Inverse proportion / Indirect proportion ✓✓A As the number of learners increases the number of balloons decrease✓✓E	2A answer 2E explanation (4)	B L4
3.1.2	The number of balloons given to each learner decrease. ✓✓ O	2 O reason (2)	B L4
3.1.3	**A** $=\frac{48}{4}$✓M = 12✓ A **B** $=\frac{48}{6}$✓M = 8✓ A	1M dividing by 4 1A answer 1M dividing by 6 1A answer **AO** (4)	B L3
3.1.4	One thousand four hundred and fifty six. ✓✓ A	2A answer (2)	B L2
3.2.1	Days of the week✓✓ A	2A answer (2)	B L1
3.2.2	Wednesday✓✓ RG 6[✓✓ RG	2RG day 2RG number of liters (4)	B L2
3.2.3	7 days / Seven ✓✓ A	2A answer (2)	B L2
3.2.4	Yes. ✓ A In a week there is a spike on Tuesday from 3 to 45 liters✓✓ O	1A choice 2O opinion (3)	B L4
		[23]	

QUESTION 4 [20 MARKS]			
Quest	**Solution**	**Explanation**	**T&L**
4.1.1	Questionnaire ✓✓A	2A answer (2)	DH L2
4.1.2	Discrete ✓A The marks represented in percentage is counted✓✓ O **OR** whole numbers ✓✓ O	1A choice 2O opinion (3)	DH L4
4.1.3	25; 29; 30; 30; 32; 35; 35; 38; 56; 56; 58 ; 58; 58; 67; 67 ; 70; 74; 76 ; 85; 85✓RG Median $= \frac{56+58}{2}$ ✓MA = 57✓ A	1RG arranging values 1MA dividing by 2 1A answer (3)	DH L3
4.1.4	Modal = 58 ✓✓ A	2A answer (2)	DH L1
4.1.5	✓ RG Range = 85 – 25✓ M = 60%✓ A	1RG reading correct values 1M concept of a Range 1A answer (3)	DH L2
4.1.6	Mean $= \frac{25+29+30+30+32+35+35+38+56+56+58+58+58+67+67+70+74+76+85+85}{20}$ ✓ MA = 53.15	1M adding all correct value 1MA dividing by 20 (2)	DH L3
4.2.1	80-100 ✓✓ RT	2RT answer (2)	DH L2
4.2.2	Yes✓ A More leaerners that passed are in level 2. ✓✓ A **OR** Fewer learners are above level 5✓✓ A	1A choice 2O opinion (3)	DH L4
		[20]	

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