education

Department:
Education
PROVINCE OF KWAZULU-NATAL

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY

COMMON TEST

MARCH 2020

MARKS: 75

TIME: 1½ hours

This question paper consists of 10 pages

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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 ALL final answers off appropriately to TWO decimal places, unless stated otherwise.
7. Indicate units of measurements, where applicable.
8. Diagrams and graphs are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

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QUESTION 1

1.1 Amon is a grade 9 learner. Study his May 2019 activity calendar and answer the questions that follow.



Source: https://www.dreamstime.com

1.1.1 Write down the date on which Amon will enjoy Beverage. (2)

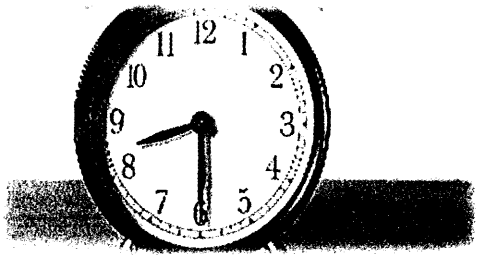
1.1.2 On which day of the week will Amon dance like a chicken? (2)

1.1.3 Amon needs 10 hours to prepare for EMS test. He decides to study for 2 hours per day.

a) Give the name of the day Amon will start preparing for his EMS test. (2)

b) The clocks below indicate the starting time and end time of the EMS test respectively.

Start



End



Determine the duration of the test. (2)

1.1.4 Give a reason why Amon will not go to school on the 1st of May 2019. (2)

1.2 Thabo and his friend Amon shared a Job of cleaning Thabo's uncle's yard. He paid both of them R400. Thabo worked for three hours and Amon worked for two hours.

1.2.1 Determine the amount Thabo will receive, if they decide to share the R400 in a ratio of 3:2. (3)

1.2.2 Thabo used $\frac{1}{5}$ of his money towards a second hand video game. Calculate how much the video game cost. (2)

1.2.3 Thabo's transport fare to school has increased from R800 to R1 150. Determine the percentage increase of the transport fare.

You may use the formula: **Percentage increase** $= \frac{\text{New amount} - \text{Old amount}}{\text{Old amount}} \times 100\%$ (3)

1.2.4 Study TABLE 1 below showing the cost rates Thabo's mother saw for the price of potatoes from two supermarkets.

TABLE 1: Costs rates

Supermarket A	Supermarket B
R20 per 4,5kg	1.8 kg packet per R8

Determine showing all calculations which supermarket will be the best value for money. (4)

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QUESTION 2

2.1 TABLE 2 below shows the number of Grade 10 learners participating in activities at Viva high school in 2019. Study TABLE 2 below and answer the questions that follow. Some values have been omitted.

TABLE 2: Total number of Grade 10 at Viva high school in 2019

Gender	Athletes	Debate	Chess	Other activities	Total
Boys	6	....	8	29	**...**
Girls	5	15	**A**	25	**57**
Total	**11**	**25**	**20**	**...**	**B**

Note : ONLY one activity is allowed per learner*

2.1.1 Determine the values of **A** and **B** in the table. (4)

2.1.2 Give the ratio in simplified form for the number of athlete boys to the total number of learners playing chess. (2)

2.1.3 The total number of enrolled learners at Viva high school is 810 learners. Express the total number of Grade 10 learners as percentage of the total number enrolled in the school. Round off your answer to the nearest percentage. (3)

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2.2 Mvuzo's parents received the Grade 10 stationery list and decided to draw up a shopping list with prices from Watson's stationery and the nearest supermarket.

Item	Quantity	Watson's price	Supermarket price
A4 exercise book (72 pg.)	7	R27.93	R23.60
A4 unruled exercise book (72 pg.)	3	R7.47	R7.47
A4 2Quire hardcover (192 pg.)	4	R63,96	R59.96
A4 plastic files- 30 pocket	7	R105	R90.93
Eraser	1	R5.99	R5.00
Permanent marker	1	R5.99	R5.99
HB pencils	3	R20.60	R18.00
Calculator	1	R129.90	R109.00
Ruler(30cm)	2	R5.60	R4.00
Math-set	1	R16.99	R22.49
A4 coloured paper(20 pack)	1	R34.80	R28.90
Pens	4	R16.80	R16.80
PVC presentation folder	1	R9.90	R8.80
Exam pad- A4	2	R18.98	R17.20
Arch lever file	1	R29.00	R27,20
File dividers (10 plain tab)	1	R5.99	R5.90
Total		**R504.90**	**R451.24**

Study the shopping list comparison above and answer the following questions.

2.2.1 Determine the total amount the parents will save, if they only consider to buy at the supermarket. (2)

2.2.2 Identify the item that is cheaper at Watson's compared to the supermarket. (2)

2.2.3 Determine the total number of A4 items the parents will need to buy for Mvuzo. (2)

2.2.4 Convert the length of the ruler to inches if **1 inch = 2.54 cm**. (2)

2.2.5 Give one valid reason why the parents made the list for stationery in different shops. (2)

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QUESTION 3

3.1 Below is the recipe for warm Cold and Flu fighting Soup. Study the recipe and use the conversion table to answer the questions that follow.

Kashayam soup (serve 3 people)
1 teaspoon cumin seeds
1 teaspoon black pepper corns
1 teaspoon turmeric powder
1 teaspoon mung/moong dal (optional)
A small piece of cinnamon; 4 cloves
one inch piece of ginger; 6-7 cloves garlic
½ teaspoon salt to taste
750 ml of water



Source: http//kannammacooks.com

Honey to serve

Conversions
1 cup = 250ml
1tsp (teaspoon) = 5ml
1tbs (tablespoon) =15ml
1litre = 1 000 mℓ
1 clove = 1, 5 tsp.

3.1.1 Convert the amount of water in the recipe into cups. (2)

3.1.2 Give the amount of 2 cloves in tablespoons (tbs) for this recipe. (4)

3.1.3 Determine the amount of water in millilitres needed for THREE teaspoons of salt. (3)

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3.2 Miss Tamil wishes to buy a blender to blend Kashayam. She saw the advert below of the nutrition blender.



Bennett Nutrition Blender

Cash price R 999^{00}

Cash Discount 20% off

Shipping Dimensions
198mm (L) x 311mm (W) x 393mm (H)
Product weight 3.64 kg
In stock, in selected store

Source:http//www.makro.co.za/appliances

Study the advertisement and the information above to answer the following questions.

3.2.1 Calculate the discount amount offered on the Bennett Nutrition blender. (2)

3.2.2 Give the product weight of the blender in grams, if **1kg = 1 000g.** (2)

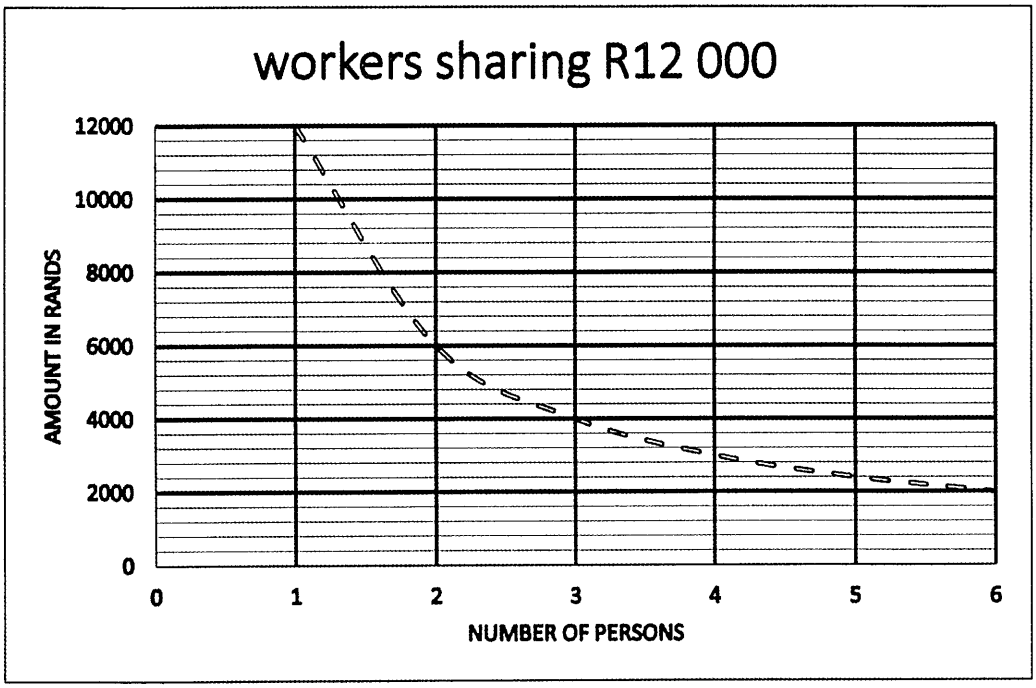
3.2.3 Write down 3.64 million grams using an international format decimal comma thousand separator. (2)

[15]

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QUESTION 4

4.1 The graph below represents the relationship between the amounts each worker receives after sharing a pay out of R12 000 for doing a particular job.



Study the graph above and answer the following questions:

4.1.1 Write down the type of proportion represented on the graph. (2)

4.1.2 Choose which of the following will be the best to represent the graph above. Write down ONLY the correct letter.

A: $\textbf{Amount} = \frac{\textbf{R12 000}}{\textbf{number of persons}}$

B: $\textbf{Amount} = \boldsymbol{R12\,000 \times number\ of\ persons}$ (2)

4.1.3 Give one reason why the line of the graph is represented as a dotted line. (2)

4.1.4 Write down the amount each person will receive if only three people are working on the job. (2)

4.1.5 Explain why the line is a curve in relation to the two variables. (2)

4.2 Stanford works as a builder for 6.5 hours per day excluding 30 minutes tea break and one hour lunch. He starts working at 07:30 in the morning.

4.2.1 Determine the time of the day he leaves work for home. (3)

4.2.2 Stanford calculated that 245.37 bags of cement are required for a job. His manager states that they need to purchase 246 bags.

Explain why the manager's statement is correct. (2)

4.1.3 It took the workers 207 hours to finish the job. Write the 207 hours in terms of days and hours. (4)

[19]

TOTAL: [75]

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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 rounding/units
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 5 pages.

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QUESTION 1 [22 MARKS]			
Que	**Solution**	**Explanation**	**T/L**
1.1.1	6 May 2019 ✓✓ A	2A, Correct Date **ACCEPT: 06/05/2019** (2)	M L1
1.1.2	Tuesday ✓✓ A	2A, Correct day (2)	M L1
1.1.3 a)	Pack Rat Day ✓✓ A	2A, Answer (2)	M L1
1.1.3 b)	Duration = 10:15 – 08:30 ✓MA = 1hour 45minutes **OR** 1.75 hours ✓A	1MA, Subtracting times 1A, Duration **AO** (2)	M L2
1.1.4	It is a holiday ✓✓ RT	2RT, Reading from the calendar (2)	M L1
1.2.1	Total parts = 3+2 = 5 ✓M Thabo's share = $\frac{3}{5} \times R400$ ✓ MA = R240 ✓A	1M, Adding total parts 1MA, Multiplying by R400 1A, Answer (3)	F L2
1.2.2	Video game = $\frac{1}{5} \times R240$ ✓ M = R48 ✓CA	**CA from 1.2.1** 1M, Multiplying by R240 1CA, Answer (2)	F L2
1.2.3	% increase = $\frac{R1150-R800}{R800} \times 100\%$ ✓ SF = $\frac{R350}{R800} \times 100\%$ ✓ S = 43.75% ✓ A	1SF, Substitution 1S, Simplification 1A, Answer (3)	B L2
1.2.4	Supermarket A= $\frac{R20}{4{,}5kg}$ ✓ M = R4.44/kg ✓ CA Supermarket B = $\frac{R9}{1.8kg}$ = R5/kg ✓CA Supermarket A, has better price ✓O	1M, Dividing by weight 1CA, Price per kg supermarket A 1CA, Unit price per kg supermarket B 1O, Conclusion (4)	F L4
		[22]	

QUESTION 2 [19 MARKS]			
Que	**Solution**	**Explanation**	**T/L**
2.1.1	**A** = 20 – 8 ✓ M = 12 ✓A **OR** **A** = 57 - 25 – 15 - 5 ✓ M = 12 ✓ A **B** = 11 + 25 + 20 + (29 + 25)✓ M = 11 + 25 + 20 + 54 = 110 ✓A **OR** B = 6 + (25 – 15) + 8 + 29 +57 ✓ M = 110 ✓A	1M, Subtraction 1A, Answer **OR** 1M, Subtraction 1A, Answer 1M, Adding 1A, Answer **OR** 1M, Adding 1A, Answer **AO** (4)	B L2
2.1.2	6 : 20 ✓ MA 3 : 10 ✓A	1MA, Correct ratio and order 1A, Simplified ratio (2)	B L2
2.1.3	% Grade = $\frac{110}{810}$ × 100% ✓ M = 13.58024... ✓ CA ≈ 14% ✓R	**CA from 2.1.1** 1M, % concept 1CA, Answer 1R, Rounding (3)	B L3
2.2.1	Difference = R504.90 – R451.24 ✓M = R53.66 ✓A	1M, Subtracting total 1A, Answer **AO** (2)	F L2
2.2.2	Math set ✓✓ RT	2RT, Reading from the table (2)	F L1
2.2.3	Total no. A4 = 7 + 3 + 4 + 7 +1 + 2 ✓ M = 24 ✓ CA	1M, Adding correct values 1CA Answer **AO** (2)	F L1
2.2.4	Length (inches) = $\frac{30cm}{2.54cm}$ ✓MA = 11.81 inches ✓ A	1MA, Conversion 1A, Answer (2)	M L2
2.2.5	Because they wanted to compare the prices to save money. ✓✓ O	2O, Opinion (2)	F L4
		[19]	

QUESTION 3[15 MARKS]			
Que	**Solution**	**Explanation**	**T/L**
3.1.1	Number of cups = $\frac{750ml}{250ml}$ ✓M = 3 ✓ A	1M, Dividing by 250ml 1A, Answer **AO** (2)	M L1
3.1.2	Number of teaspoon = 4 cloves × 1.5 ✓ M = 6 ✓A Cloves in ml = 6 tsp × 5ml = 30ml ✓CA No. of tbs = 2 ✓CA	1M, Multiplying by 1.5 1A, Number of tsp 1CA, Cloves in ml 1CA, Number of tbs (4)	M L3
3.1.3	Water in ml = $\frac{3}{0.5} \times 750\ ml$ ✓ M ✓MA = 6 × 750ml = 4 500ml ✓ A	1M, Multiplying by 750 1MA, Number of $\frac{1}{2}\ tsp$ 1A, Answer (3)	M L3
3.2.1	Discount = $\frac{20}{100}$×R999 ✓ MA = R199.80 ✓ A	1MA, % Concept 1A, Answer **AO** (2)	F L2
3.2.2	Weight in g = 3.64 kg × 1 000 ✓ M = 3 640 ✓ A	1M, Multiplying by 1000 1A, Answer **AO** (2)	M L1
3.2.3	3.64 × 1 000 000 ✓ C 3,640,000g ✓A	2C, Converting 3.64g 1A, Answer **AO** (2)	B L1
		[15]	

QUESTION 4[19 MARKS]			
Que	**Solution**	**Explanation**	**T/L**
4.1.1	Indirect proportion ✓✓ A **OR** Inverse proportion ✓✓ A	2A,Correct answer (2)	B L1
4.1.2	**A**✓✓ A **OR** Amount = $\frac{R12\,000}{No.of\ persons}$ ✓✓A	2A, Answer (2)	B L1
4.1.3	Because the number of persons is discrete. ✓✓ E **OR** Number of persons cannot be written as decimal ✓✓ E	2E, Explanation (2)	B L4
4.1.4	R4 000 ✓✓ RT	2RT, Reading from the graph (2)	B L2
4.1.5	Because the amount shared by workers cannot be equal to zero. ✓✓ O	2O, Opinion (2)	B L4
4.2.1	✓ C ✓M Time of the Day = 07 : 30 + 6h30min + 30min +1h = 15 : 30 ✓ CA	1C, Converting 6,5hrs to 6h30min 1M, Adding elapsed times 1CA, Time of the day **AO** (3)	M L2
4.2.2	The number of bags has rounded up ✓✓ O **OR** There is no fraction of a bag of cement in the shop ✓✓ O	2O, Opinion (2)	B L4
4.2.3	Time = 207hours ÷ 24 hours ✓M = 8,625 days ✓ CA = 8 days + 0.625 ×24 ✓ C = 8 days and 15hours ✓CA	1M, Dividing by 24hrs 1CA, time in days 1C, Converting 0.625 days to hours 1CA, Time format (4)	M L3
		[19]	
		TOTAL:	**[75]**

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