

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

NOVEMBER 2019

MATHEMATICAL LITERACY P2

MARKS: 75

TIME: 1½ hours



This question paper consists of 8 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully and answer ALL the questions.

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 according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable.
8. Maps and diagrams are NOT drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

- 1.1 Your friend, Kim, has asked you to help him with his bank statement. He is sure there are some errors on the bank statement as some things just do not make sense to him. Below is a copy of Kim's bank statement.

FIRST NATIONAL BANK									
Mr Kim de Villiers 28 Nahoon Street Nahoon 5241		Statement for January 2019		Account number 23456799 Vincent Park Branch Branch code: 211021					
Date	Details	Debit		Credit		Fees		Balance	
1/1/19	Opening balance							12 783	56
3/1/19	Deposit			1 000	00	15	00	13 768	56
5/1/19	Payment: Con Cars	876	45			2	50	12 889	61
5/1/19	Payment: M Smith	2 000	00			2	50	10 887	11
12/1/19	EFT Purchase	125	60			1	00	A	
26/1/19	Payment: S Yusuf	2 600	00			2	50	8 158	01
28/1/19	Salary			11 560	00			19 718	01

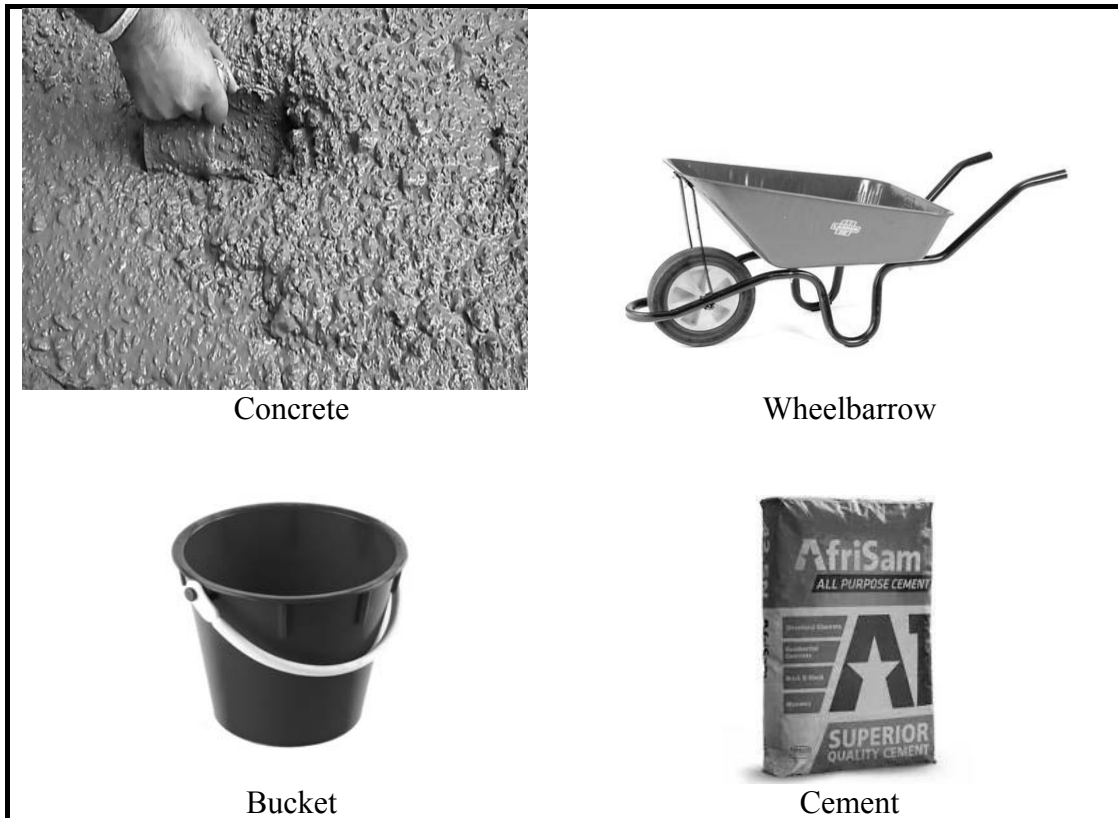
(NOTE: EFT means electronic funds transfer.)

- The fee for deposits is R2,00 plus R1,00 for every R100,00.
- Stop order payments cost R2,50 regardless of the amount.
- Card purchases cost R1,00 regardless of the amount.
- Rent is Kim's biggest expense.

Use the above bank statement to answer the questions below.

- 1.1.1 Determine the missing value of **A**. (2)
- 1.1.2 Kim claims that there is a mistake in the fees column. Indicate where this mistake occurred and verify, with the necessary calculations, whether his statement is valid or not. (4)
- 1.1.3 The bank has confirmed that there is indeed an error on his statement. If the error is corrected, what should Kim's balance be on the 28 January 2019? (2)
- 1.1.4 Kim states that her bank fees for January 2019 will be more than R30,00. Verify, with the necessary calculations, whether his estimation is valid or not. Keep in mind that the error has been corrected. (3)
- 1.1.5 State ONE possible reason why banks are charging fees (to their customers). (2)

- 1.2 Kim received an increase in his salary of 3,5% in April 2019. He wants to save his monthly increment and is planning to use it to build a concrete floor for his bird cage.



Kim needs a concrete mixture of 0,27 cubic metres of cement, sand and gravel to make a concrete floor for his bird cage. He has a bucket with a capacity of 8 ℓ and a wheelbarrow with a capacity of 50 ℓ.

Assume that $1 \text{ m}^3 = 1\,000$ litres

- 1.2.1 Calculate how much litres of concrete mixture will Kim need to build a floor for his cage. (2)
- 1.2.2 The ratio of cement to sand to gravel is 1 : 3 : 5. How many litres of each cement, sand and gravel is needed? Assume that the volume of the concrete is more or less the same as the sum of the volumes of all the ingredients (cement, sand and gravel). (4)
- 1.2.3 Kim has asked Thato to do this work for him and he has agreed to do it on a Saturday. Calculate the amount of money Kim will have to pay Thato if the rate is R45,75 per hour (and part thereof) and he will finish the job in 5,4 hours. [NOTE: The rate is double on weekends.] (3)
- 1.2.4 The total cost for building material is R1 524,99, excluding labour. Kim saves his increment for six months. Verify, with the necessary calculations, whether Kim will have enough money to start the project early in October 2019. (4)

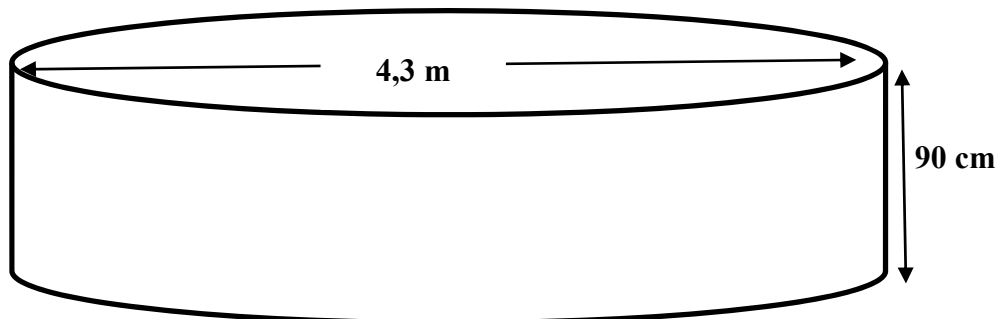
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QUESTION 2

2.1 Thembinkosi wants to put a trampoline in his yard as entertainment for his children.



The dimensions for the trampoline are shown below:



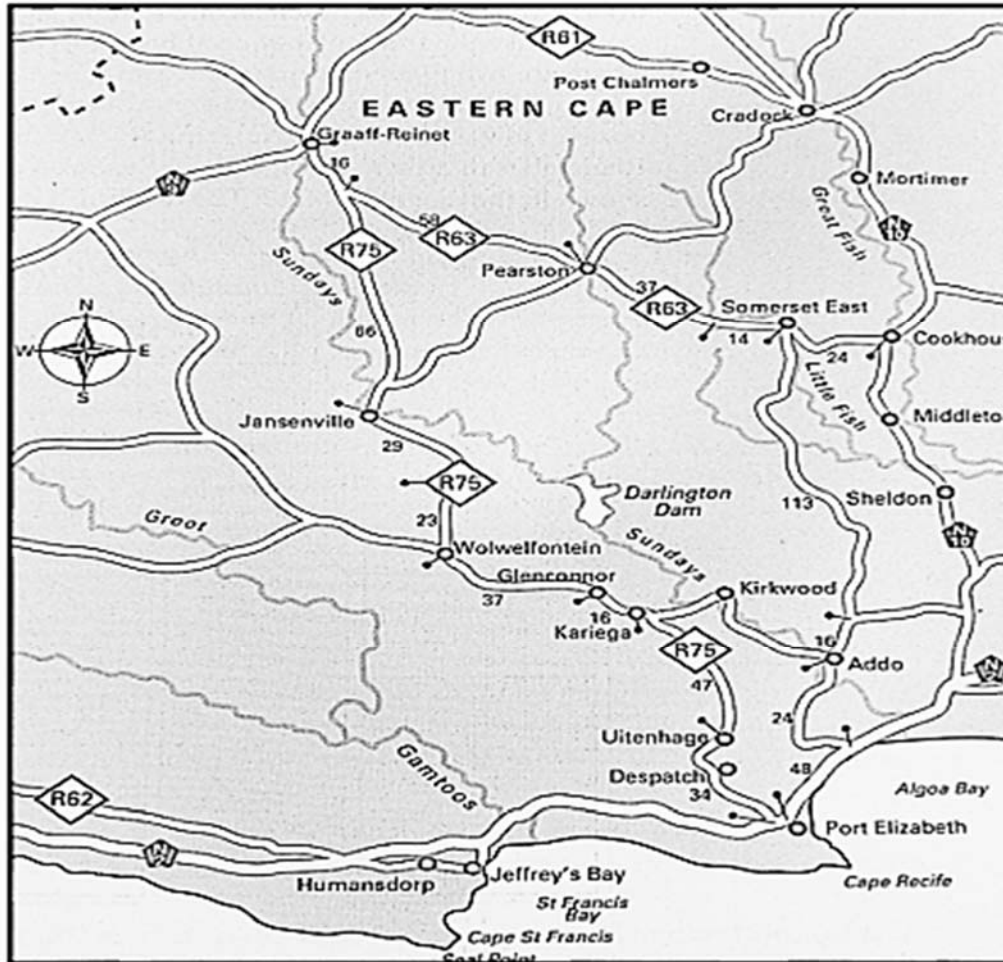
He has started by digging a hole in order for the trampoline to be placed in the hole. Although Thembinkosi has used some of the dug-up sand, he has two-thirds of the sand left over. A company is prepared to collect the leftover sand free of charge, provided there is more than 5 m^3 sand.

- 2.1.1 Calculate the area of the base of the hole in square metres, rounded off to 2 decimal places.
You may use the formula: **Area** = πr^2 ; where r = radius and $\pi = 3,142$ (2)
- 2.1.2 Determine, showing ALL calculations, whether there is enough sand for the company to come and collect it free of charge.
You may use the formula:
Volume = **Area of base x height** (4)
- 2.2 Thembinkosi has a backyard with an area of 929 m^2 .
- 2.2.1 Thembinkosi has prepared a space of 3% of the area in his backyard for the construction of the trampoline. Verify, with the necessary calculations, whether the prepared space will be enough or not. (3)
- 2.2.2 Thembinkosi currently pays R2 534 per month for insurance on his household. His broker told him that his insurance premium will go up by 2,5% after the trampoline has been installed. He predicts that his new monthly insurance premium will be R2 800. Verify, with the necessary calculations, whether his statement is valid or not. (4)

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QUESTION 3

Montego Pet Nutrition is a company that manufactures premium quality pet food that is distributed nationally and globally. The factory has undergone a R70 million-rand upgrade to its premises in Graaff-Reinet, Eastern Cape.



Scale: 1 : 2500 000

- 3.1 3.1.1 Determine the shortest route, with a motor vehicle by road for delivering boxes of the pet food to the harbour in Port Elizabeth. (3)
- 3.1.2 In which direction would they travel from Graaff-Reinet to Port Elizabeth? (2)
- 3.1.3 Why do you think the boxes are being delivered to the harbour in Port Elizabeth? (2)
- 3.2 3.2.1 Use the number scale to determine the straight-line distance from Addo to Port Elizabeth. Give your answer in kilometres. (4)
- 3.2.2 The driver travels at a speed of 100 km/h and leaves Addo at 10h00. He predicts that he will reach Port Elizabeth at 10h55. Verify, with the necessary calculations, whether his statement is valid or not.
Use the formula:
Distance = speed × time (4)
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QUESTION 4

Mrs Base, a Mathematical Literacy teacher at Zinako High School, recorded the results of her Grade 10 learners in the final examination as a percentage, as shown below.

63	57	32	96	90	60	73	87	57	78
46	48	80	88	33	55	46	67	60	78
57	60	50	47	54	71	84	85	77	81

4.1 4.1.1 Calculate the average mark of the Grade10 Mathematical Literacy learners in the final examination. (3)

4.1.2 Mrs Base claims that the mode of the data will be 78%. Explain what *the mode* is and verify whether her statement is valid or not. (3)

4.2 Mrs Base's learners' performance in the examination are summarised in the table below:

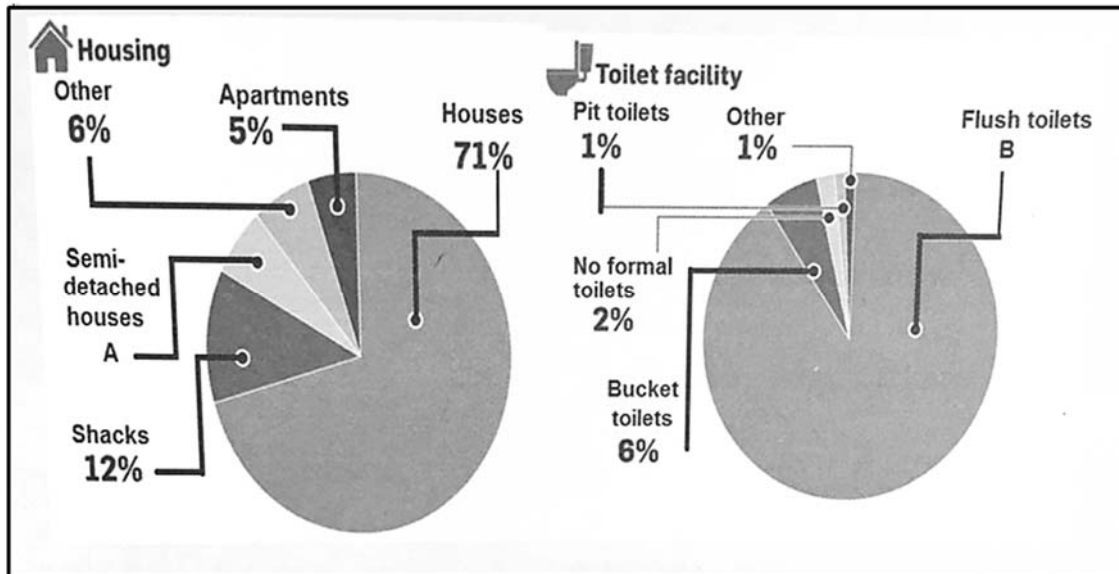
TABLE 1: RATING CODE WITH SUMMARY OF LEARNER'S PERFORMANCE

7	Outstanding	80–100	A
6	Meritorious	70–79	5
5	Substantial	60–69	5
4	Adequate	50–59	B
3	Moderate	40–49	4
2	Elementary	30–39	2
1	Not Achieved	0–29	0

4.2.1 Determine the values of **A** and **B**. (2)

4.2.2 What is the probability that a learner from Mrs Base's Mathematical Literacy class scored less than 60% in final examinations? Write your answer as a percentage. (2)

- 4.3 Study the pie charts below that show the Amathole District municipality's service delivery for a particular period. The number of households for this particular period is 324 292. Answer the questions that follow.



Refer to the pie chart above to answer the questions below.

- 4.3.1 Determine the missing value of A and calculate how many semi-detached houses are in the Amathole District Municipality. (4)
- 4.3.2 Determine the number of households which has flush toilets. (3)
- 4.3.3 Write down the percentage of shacks as a ratio to the number of 'other'. (2)
- 4.3.4 Give an example of the type of housing referred to as 'other' in the pie chart above. (2)

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TOTAL: 75