KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY

COMMON TEST

SEPTEMBER 2024

MARKS: 75

TIME: 1 ½ hours

This question paper consists of 6 pages and an addendum with 2 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
   - ANNEXURE A for QUESTION 3.
   - ANNEXURE B for QUESTION 4.4.
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 calculations clearly.
7. Round off ALL final answers to two decimal places.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

1.1

Miss Cabe owns a house in Dundee. She pays a tariff of R443,96 for sanitation, which is charged based on her property area of 100m by 100m.

NOTE: Sanitation refers to waste water that is drained from a household.

Use the information above to answer the questions that follow.

1.1.1 Define the term *tariff* according to the given context. (2)

1.1.2 Write down, to the nearest 100, the cost of the sanitation tariff. (2)

1.1.3 Identify the shape of Miss Cabe's property area. (2)

1.1.4 Convert 100 metres to centimetres. (2)

1.1.5 Write the amount of money paid by Miss Cabe for sanitation in words. (2)

1.16 Determine the probability of having the distance units in the information above given in millimetres. (2)

1.2

Miss Cabe saw a house plan similar to her dream house. The plan has a scale of 1:100.

Use the information above to answer the questions that follow.

1.2.1 Identify the type of scale used above. (2)

1.2.2 Interpret the scale 1:100 in the given context. (2)

[16]

QUESTION 2

2. The Mthethwa's family realised that they are spending too much money. They examined their expenditure for the month of July. TABLE 1 below shows their expenditure.

TABLE 1: MTHETHWA FAMILY'S EXPENDITURE FOR JULY.

Bond repayment on house	R5 000
Water and electricity	R1 000
School fees for 3 children	R1 200 (each)
Insurance	R1 000
Taxi Association contributions	R 500
Bank charges	R 160
Entertainment and eating out	R1 000
Petrol	R3 500
Food	R3 000

[Source:siyavula.com]

Use TABLE 1 and the information above to answer the questions that follow.

2.1 Show that the total monthly school fees for 3 children is R3600. (2)

2.2 Calculate the Mthethwa family's total monthly expenses. (2)

2.3 Define the term *fixed expenses* according to the given context. (2)

2.4 Identify THREE fixed expenses in the table above. (3)

2.5 Write as a ratio the expenditure amount of the Bond repayment on the house to the water and electricity expenditure amount in simplest form. (3)

2.6 Give one reason why food is classified as a variable expense. (2)

2.7 Mr. Mthethwa claims that the expenditure amount of food is 6 times the amount of Taxi Association contributions. Verify, showing ALL calculations, if his statement is CORRECT. (5)

[19]

QUESTION 3

3. Mr Mahlambi's daughter has a floor plan of the area around her school. ANNEXURE A shows the floor plan of the school area.

Use ANNEXURE A to answer the questions that follow.

3.1 Determine the number of houses on the plan. (2)

3.2 Identify the building that is west of the supermarket. (2)

3.3 In which general direction does the library door face? (2)

3.4 Write down the probability of a house starting with letter A, as a percentage. (3)

3.5 Mr Mahlambi claimed that Catherine's, Ariana's and Ruth's house get a lot of sunlight in the afternoon. Critically comment on his remarks. (3)

3.6 The Twisted Lane is situated next to the school. Give TWO reasons why this type of lane is next to the school. (4)

3.7 The scale used on the plan is 1mm representing 10 cm in real life.

3.7.1 Write the given scale in number format. (2)

3.7.2 Measure the northern side of the plan and use the given scale to calculate the actual length (in m). (4)

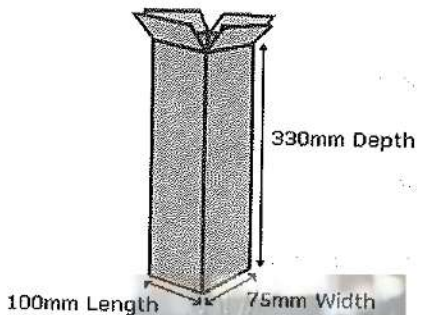
[22]

QUESTION 4

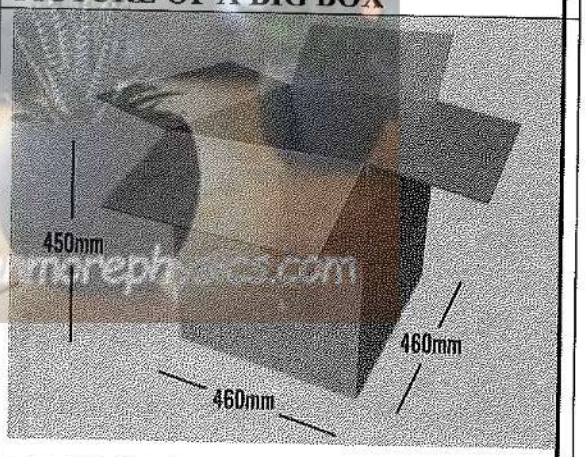
4.

Miss Khumalo wants to sell water bottles to her grade 8 learners as part of an EMS fundraising project. Bottles will be packed into boxes and then delivered to school. The water will be packed in small boxes which will then be packed in big boxes for transportation. The small boxes will be packed in an upright position inside the big box. The picture and dimensions of the boxes are shown below.

PICTURE OF A SMALL BOX



PICTURE OF A BIG BOX



[Source :www.s3.amazonaws.com]

Use the information above to answer the questions that follow.

4.1 Write down the name of the base of the shape base of the big box. (2)

4.2 Determine the number of small boxes that will fit into the length of the big box. (3)

4.3 Miss Khumalo stated that 6 small boxes will fit in a base of the big box if the length of a small box is placed against the length of big box. Verify, with calculations, if her statement is correct. (5)

4.4

Miss Khumalo will be using a sun shelter when selling the water bottles. ANNEXURE B shows the picture with the assembly instructions of a Sun Shelter. Assembly pictures are not in the order of the pictures given.

Use ANNEXURE B to answer the questions that follow.

Match Column A, assembling steps of the tent, with Column B, consisting of pictures. Write only the number and the step i.e 1. A. (8)

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TOTAL MARKS: 75

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ADDENDUM

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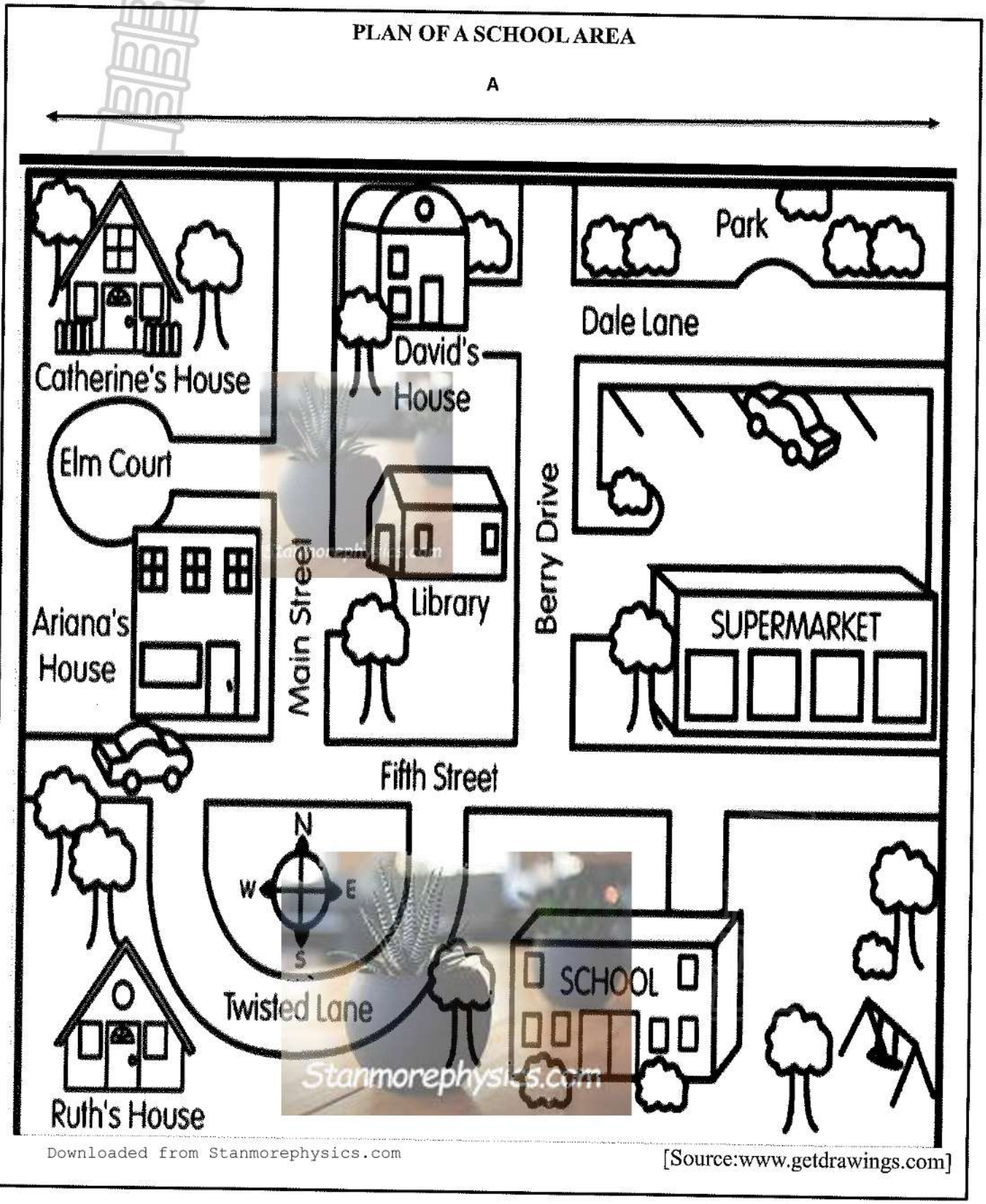
SEPTEMBER 2024

This addendum consists of 3 pages with 2 annexures.

ANNEXURE A

QUESTION 3

PLAN OF A SCHOOL AREA

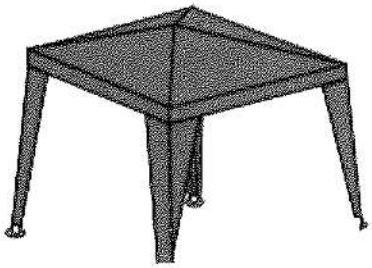
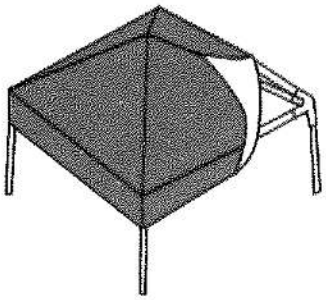
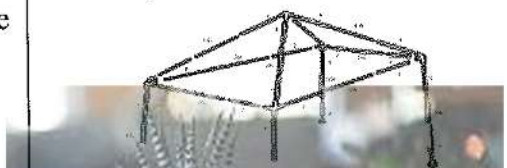


[Source:www.getdrawings.com]

ANNEXURE B

QUESTION 4.4

SUN SHELTER ASSEMBLY INSTRUCTIONS

Column A	Column B
1. Assembly top frame. One corner at a time, insert poles on top of the leg section into the corner hubs.	**A.** 
2. Hook the leg hook that is attached to the bottom corners of the shelter. 	**B.** 
3. Align the shelter corner with a side of the frame and gentle pull the cover over the top of the frame assembly.	**C.** 
4. Mount your shelter for added stability as it is ready to be used	**D.**

[Source: www.yumpu.com]

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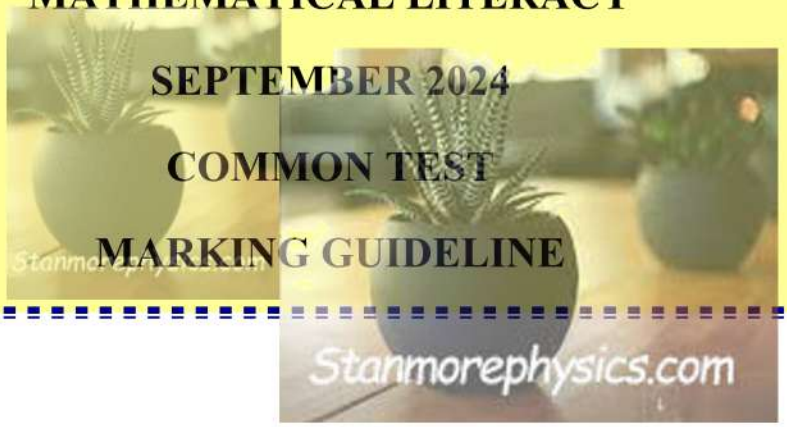
MARKING GUIDELINE



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.
- 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 precedes it.
- No penalty for rounding (NPR) if the first decimal is correct.

QUESTION 1 [16] ANSWER ONLY FULL MARKS			
Q	**Solution**	**Explanation**	**T&L**
1.1.1	It is the rate charged for sanitation at Dundee✓✓O	2O correct explanation (2)	F L1 E
1.1.2	R400✓✓R	2R correct rounding (2)	F L1 E
1.1.3	Square✓✓A	2A correct shape (2)	M L1 E
1.1.4	10 000cm✓✓C	2C correct conversion (2)	M L1 E
1.1.5	Four hundred and forty three rands and ninety six cents✓✓A	2A correct amount (2)	F L1 M
1.1.6	0✓✓A **OR** zero	2A answer (2)	P L1 M
1.2.1	Number scale✓✓A **OR** Ratio✓✓A **OR** Numerical✓✓A	2A answer (2)	MP L1 M
1.2.2	1unit/mm/cm of the house plan on paper represents 100 units/mm/cm on the ground/reality.✓✓A	2A answer (2)	P L1 M
			[16]

QUESTION 2[19 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
2.1	Total amount ✓RT = R1200 x 3✓MA = R3600	1RT correct values 1M multiplying correct values (2)	F L2 E
2.2	Total monthly expenses = R5000+R1000+3(R1200)+R1000 +R500+ R160+R1000+R3500+R3000 ✓MA = R18 760✓A	**MCA for the total amount in 2.1** 1M adding correct values 1A answer (2)	F L2 M
2.3	Fixed expenses is the monthly amount of money the Mthethwa family pays and cannot change. ✓✓O	2O correct explanation	F L1 M
2.4	Bond repayment on house✓RT School fees✓RT Bank charges✓RT **OR** Insurance/Tax Association contribution✓RT	1RT for each fixed expenses x 3 (3)	F L2 M
2.5	✓RT =5000: 1000 ✓MA = 5:1✓A	1RT correct values 1M correct arrangement 1A answer (3)	F L2 M
2.6	Food you buy depends on the amount of money you have. ✓✓O **OR** It varies✓✓O **OR** Any other valid reason	2O correct explanation (2)	F L4 M
2.7	✓RT = $\frac{3000}{500}$ ✓MA = 6✓A The statement is true✓✓O	1RT correct values 1M dividing correct values in a correct order 1A answer 2O opinion (5)	F L4 D
			[19]

QUESTION 3 [22 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
3.1	4 ✓✓A	2A answer (2)	MP L1 E
3.2	Library ✓✓RT	2RT answer (2)	MP L1 E
3.3	West ✓✓A	2A answer (2)	MP L2 E
3.4	P(A) = ✓MA $= \frac{1}{4}$ X 100%✓M = 25%✓A	**CA from 3.1** 1MA dividing correct values 1A correct events 3A correct outcomes (3)	P L2 E
3.5	The statement is correct ✓A The west side is exposed to the sun in the afternoon ✓✓O **OR** These three houses are on the west side, where the sun set. ✓✓O	1A answer 2O correct reason (3)	MP L4 M
3.6	Car don't drive in high speed.✓✓O To avoid traffic along Fifth Street.✓✓O **OR** Drop off and pick up zone✓✓O	2O correct opinion 2O correct opinion (4)	MP L4 M
3.7.1	1mm: 100mm✓C 1:100✓A **OR** 0,1cm: 10cm✓C 1:100✓A	1C converting 1A answer (2)	M L2 M

3.7.2	Measured distance =175 mm✓M Actual distance =175 x 100 ✓MA =$\frac{17500mm}{1000}$ ✓C = 17,5m✓A **OR** Measured distance =17,5 cm✓M Actual distance =17,5 x 100 ✓MA =$\frac{1750cm}{100}$ ✓C = 17,5m✓A	1M correct measurement of northern side 1MA multiplying with a correct scale 1C converting 1A simplification **Accept 17,4 cm** (4)	M L3 M
			[22]

QUESTION 4[18 MARKS]

Q	Solution	Explanation	T&L
4.1	Square ✓✓A	2A answer (2)	M L1 M
4.2	Number of small boxes ✓RT = $\frac{460}{75}$ ✓M = 4✓A	1RT correct values 1M dividing 460 by 100 1A answer (3)	M L3 M
4.3	Number of small boxes along the length = 6✓A Number of small boxes along the width = $\frac{460}{100}$ ✓MA = 4 Total number of boxes at the base = 6 x 4✓MCA = 24✓CA The statement is NOT correct✓O	**MCA for the answer in 4.1** 1A answer 1M dividing correct values 1MCA multiplying correct values 1CA answer 1O opinion (5)	M L3 D
4.4.1	1.D✓✓A 2.C✓✓A 3.B✓✓A 4.A✓✓A	2A correct picture D 2A correct picture C 2A correct picture B 2A correct picture A (8)	MP L1 M
			[18]
			TOTAL MARKS:75