



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

**MATHEMATICAL LITERACY
COMMON TEST
SEPTEMBER 2018**

MARKS: 75

TIME: 1½ Hours

This question paper consists of 7 pages and an addendum with 2 annexures (3 pages).

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 1.1
 - ANNEXURE B for QUESTION 4.2
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 calculation clearly.
7. Round off ALL the final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurements, where applicable.
9. Maps and diagrams are NOT necessary drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

1.1 Mrs Jordan intends to build a house and she was given a quotation for R1.795 million to build the house. **ANNEXURE A** in the addendum shows the floor plan of the house, study the floor plan and answer the following questions.

- 1.1.1 How many windows are there in the floor plan? (2)
- 1.1.2 Explain the meaning of the scale given on the floor plan. (2)
- 1.1.3 Give the general direction of the kitchen from bedroom 2. (2)
- 1.1.4 Eastern wall measured length is 11cm. Use the scale to calculate the actual length of the wall. (2)
- 1.1.5 Write R1.795 million in number format. (2)
- 1.1.6 Building material cost is R825 000, what percentage does it represent of the total quotation? (2)

1.2 Below is an extract of the municipality utility Bill. Study the Bill and answer the questions that follow.

Table 1: Monthly Electricity bill- Alantra Municipality

Street Address		Client Name		Invoice number	
Flat B4 Accacia Heights		Ms SM Gumede		EL_710457812	
<i>Date</i>	<i>Consumption Details</i>	<i>Tariff</i>	<i>Sub Total</i>	<i>VAT@15%</i>	<i>Total Due</i>
30/06/2018	Previous reading: 338 175 Current reading: 338 395	R0,835per Kwh	R183,70	A	R211,26

- 1.2.1 Use the VAT percentage to calculate the missing value A. (2)
- 1.2.2 Which service does Alantra Municipality charge the client on this bill? (2)

[16]

QUESTION 2

- 2.1 Mr Tar is a general worker at Best Ark Academy, he received the bank statement from his bank. Table 2 below shows the part of the statement from 1 April 2018 to 26 April 2018. Also, note that 2 April 2018 was a public holiday.

Study Table 2 below and answer the questions that follow.

Table 2 : Savings Account Bank statement

<i>Date</i>	<i>Transaction</i>	<i>Debit</i>	<i>Credit</i>	<i>Closing balance</i>
01/04/2018	Balance brought forward			R3 064,08
01/04/2018	Interest		R30,64	R3 094,72
06/04/2018	Cheque(save)		R2 400	R5 494,72
10/04/2018	POS Purchase	R444,27		R5 050,45
17/04/2018	Deposit(EFT)		A	R5 300,45
23/04/2018	Cash withdrawal	R680		B
26/04/2018	Closing balance			-----
*EFT – electronic funds transfer				
*POS – point of sale e.g. card purchase at till point				

- 2.1.1 Name ONE method of banking Mr Tar will use to do the EFT transactions. (2)
- 2.1.2 Determine the value of **A** and **B**, the deposit and the closing balance. (4)
- 2.1.3 Mr Tar withdrew R680 on the 23/04/218 from his own bank ATM. Determine the bank charges for this transaction. (3)
You may use the formula:
Bank transaction fee = R3, 00 + R1, 20 per R100 (or part thereof).
- 2.1.4 If Mr Tar decides on using ATMs from other banks for withdrawals, Table 3 below shows the transaction fees that will be applicable.

Table 3. Other banks ATM withdrawal transactional fee

Amount Withdrawn(R)	500	1000	...	Q	2500	...	4000
Transaction fee	R16,00	P	...	R34,00	R40,00	...	R

*Minimum transaction fee for withdrawal is R11.20

*Maximum transaction fee for withdrawal is R40.00

Calculate the following unknown values from table 3 above.

You may use the following formula:

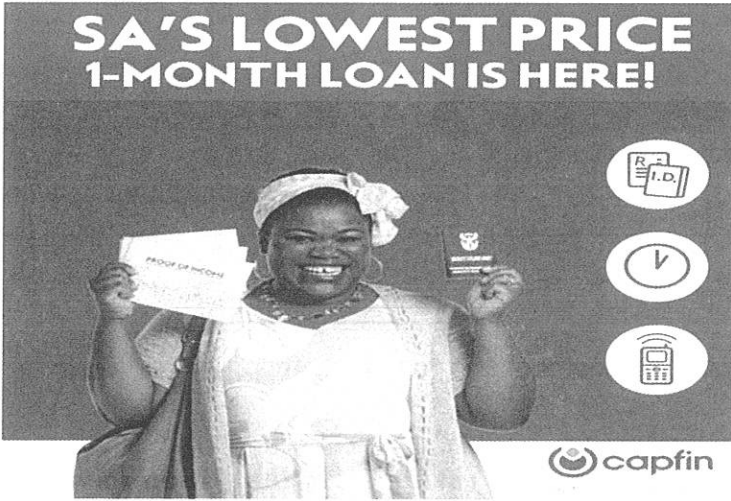
Other banks transaction fee = R10 + R1.20 per R100 (or part thereof)

- (a) P (2)
- (b) Q (4)
- (c) R (2)

2.2

Debra needs urgent cash for an unforeseen circumstance, she saw the following loan advertisement while watching television.
Study the picture and information below and answer the questions that follow.

Television advertisement



Loan terms and conditions

The Capfin 1-Month loan, for every R1000 loan, you only pay a R100 initiation fee!
No monthly service fees, no interest.

To apply at PEP, simply bring your:

- SA I.D. and
- Last 3 months' proof of income documents and

Capfin will get back to you in 5 minutes.

Source: www.facebook.com/PEPSocial/posts/

- 2.2.1 Give ONE reason why a person applying for loan needs to submit a SA I.D and proof of income for a loan approval. (2)
- 2.2.2 How much initiation fee will Debra will have to pay back if she borrowed R 4000? (3)
- 2.2.3 How long in seconds will Debra have to wait for Capfin to contact her after loan approval? (2)
- 2.2.4 Give ONE reason why there are no monthly service fees on this type of loan. (2)

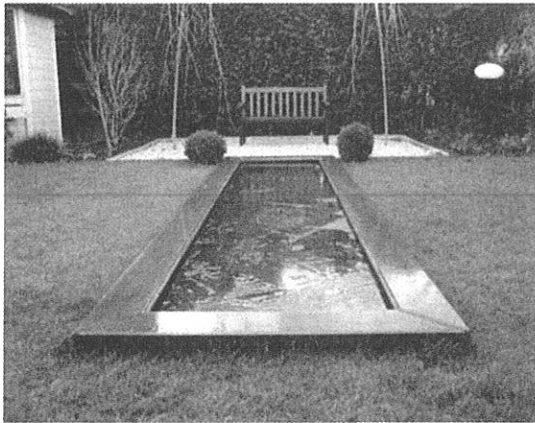
[26]

QUESTION 3

3.1

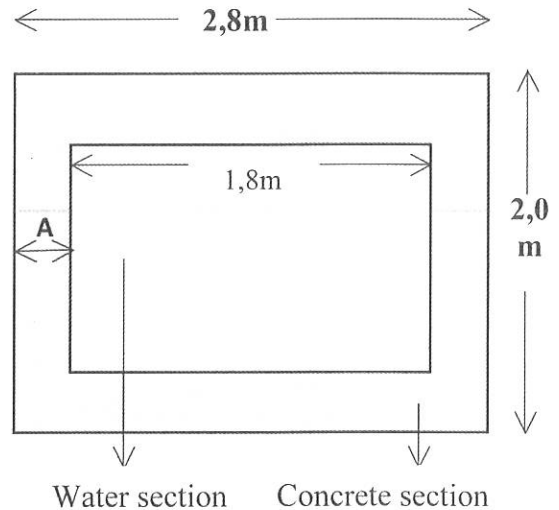
Eric is a gardener, and intends to renovate the rectangular garden water pond. Below is a picture and the labelled diagram of the water pond.

Picture of the garden water pond



Source: www.google.co.za/water+pond

Diagram of the garden water pond



Water section Concrete section

3.1.1 Calculate the value of **A**, the concrete section, in metres, of the water pond. (3)

3.1.2 Determine the total length around the pond in metres.

You may use the formula :

Perimeter of rectangle = $2(l + b)$, where $l = \text{length}$ and $b = \text{breadth}$ (2)

3.1.3 The area of the water section is $1,8\text{m}^2$; hence calculate the area of the concrete section in square metres.

Use the formula:

Area of concrete = Area of water pond – Area of water section (3)

3.1.4 Eric buys a water pump with a pump rate of 8 litres per minute; he estimated that the water pump will exactly take 3 hours 45 minutes to fill 1 800 litres in the pond.

Verify, showing all calculation, whether his statement was correct. (3)

3.1.5 Eric used an agPtek pond underwater lightbulb that saves up to 80% of electricity compare to other pond lightbulbs. Determine the maximum amount of electricity saved, if other ponds underwater light bulbs use 15Kwh. (2)

3.2 Eric spends R5 320 for compost to grow grass, calculate the amount he spend he spends per bag, if he buys 70 bags of compost. (2)

[15]

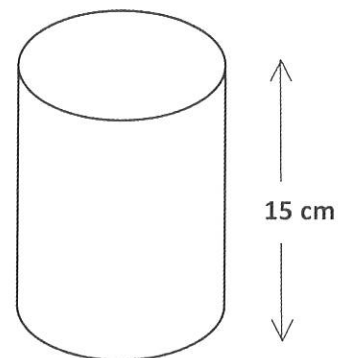
QUESTION 4

4.1

Mr Nzama is a store manager for J & J Supermarket. He intends to buy containers to store tins, with each having a height of 15cm. The container ONLY allows a 3 by 4 arrangement with a height of 0,6 metres as shown in the picture below.



Source: <https://canit.co.za/packaging-tins/>

Single Tin

- 4.1.1 Calculate the number of tins that will fit along the height of the container. (3)
- 4.1.2 Hence, determine the number of tins in ONE container. (2)
- 4.1.3 How many containers does Mr Nzama need to package 200 tins? (3)

4.2

Mr Nzama bought the table unit for his shop. The table unit comes with the assembling diagram instructions and pictures. Study the diagram in **ANNEXURE B** in the addendum and answer the following questions

- 4.2.1 How many tables will Mr Nzama assemble all together with a packet of 48 screws (C). (2)
- 4.2.2 Give **ONE** reason why the table has crossed legs and NOT straight legs. (2)
- 4.2.3 Write down the procedure used to tighten the screws on the table. (2)
- 4.2.4 The actual length of the table is 135cm.
Determine the scale used to draw the diagram in the form of 1:..... (2)
- 4.2.5 Give one valid reason why assembly instructions are given in both diagram pictures and word form? (2)

[18]**TOTAL: 75**





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ADDENDUM

SEPTEMBER 2018

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This addendum consists of 3 pages with 2 annexures.

ANNEXURE A
QUESTION 1.1

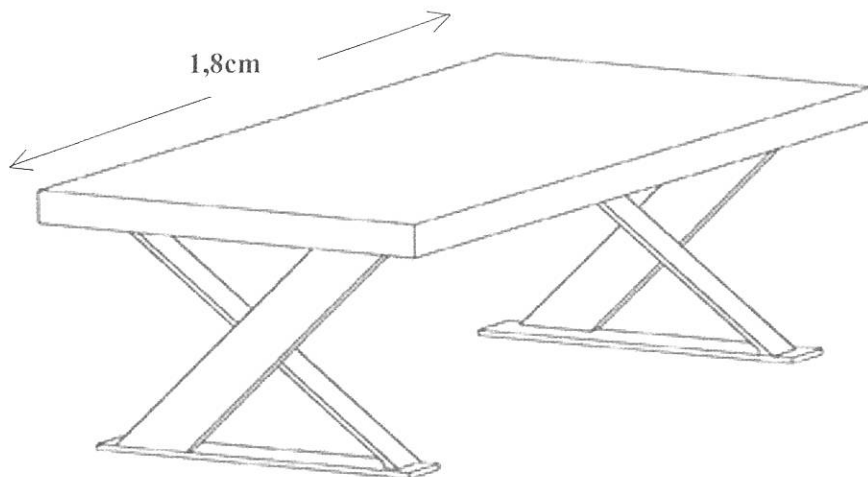
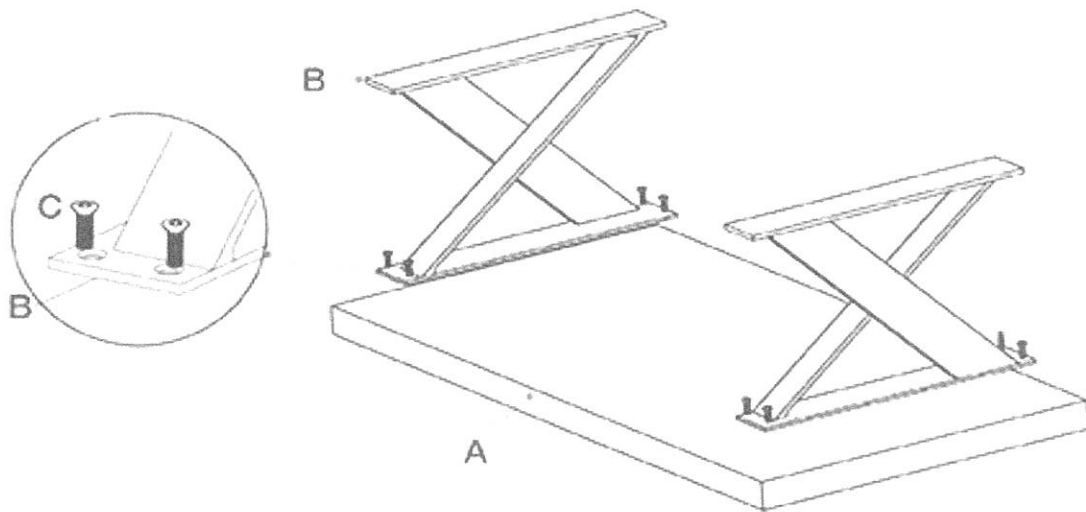
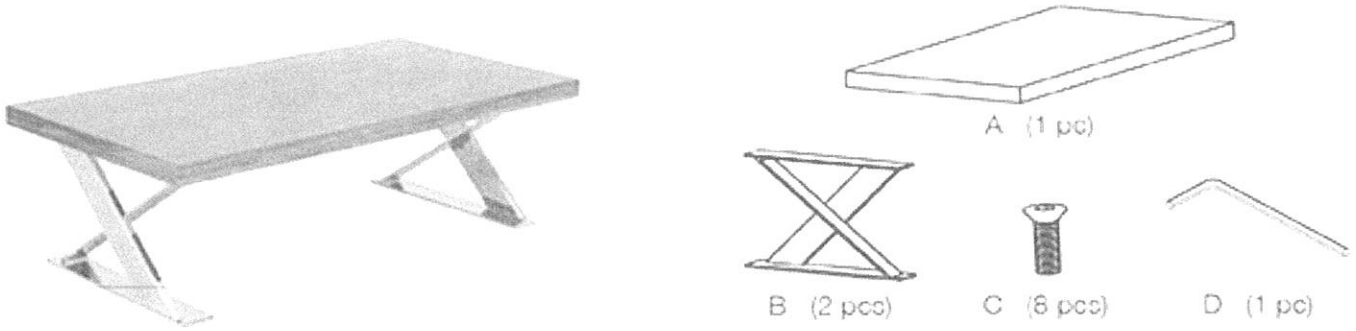
1 : 200



ANNEXURE B

QUESTION 4.2

Assembly Instructions



During assembly, hand tighten screws only. When all screws are in place, then tighten completely.



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MARKING GUIDELINE

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MARKS: 75

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
MCA	Method with consistent 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/ deriving a formula
F	Explanation
E	Explanation
U	Units
AO	Answer only full marks

This marking guideline consists of 6 pages.

MLIT GR10 + GR11

Que	Solution	Explanation	L/T
1.1.1	10 ✓✓A	2A, Answer	L1 L1
1.1.2	One unit on the floor represent two hundred units on the actual/real house. ✓✓A	2A, Answer	(2) L1 M&P
1.1.3	South East ✓✓A OR SE ✓✓A	2A, Answer OR 2A, Answer	(2) L1 M&P
1.1.4	Actual length = $11\text{cm} \times 200$ ✓MA = 2 200cm ✓A	1MA, Multiplication 1A, Answer	(2) L1 M
1.1.5	Number format = R1.795 × 1 000 000 ✓C = R1 795 000 ✓A	1C, Multiply by 1 000 000 1A, Answer	(2) L1 M
1.1.6	$\frac{825\,000}{1795\,000} \times 100\%$ ✓MCA = 45,96% ✓CA	AO CA from 1.3.1 1MCA, Percentage concept 1CA, Answer	(2) L1 F
1.2.1	A = $0,15 \times R183,70$ ✓M = R27,56 ✓CA OR A = $\frac{15}{115} \times R211,26$ ✓M = R27,56 ✓CA	AO NPR 1M, Multiplying by 15% 1CA, Answer OR 1M, Multiplying by $\frac{15}{115}$ 1CA, Answer	(2) L1 F
1.2.2	Electricity ✓✓A	[1mark, if the difference used] 2A, Answer	(2) L1 F
			[16]

QUESTION 2		126 marks!	
Que	Solution	Explanation	L/T
2.1.1	Cell phone banking. ✓✓O OR Internet banking. ✓✓O OR Automated Teller Machine (ATM). ✓✓O	20, Opinion	L4 F
2.1.2	A = R5 300,45 – R5 050,45 ✓MA = R250 ✓A B = R5 300,45 – R 680 ✓M = R4 620,45 ✓CA	1MA, Subtracting balances 1A, Answer 1M, Subtraction of R680 1CA, Answer	L3 F (4)
2.1.3	Bank charges = R3,00 + R1,20 × 6 + R1,20 = R 3,00 + R7,20 + R1,20 ✓S = R 11,40 ✓CA OR Bank charges = R3 + R1,20 × 7 ✓SF = R 3 + R8,40 ✓S = R 11,40 ✓CA	1SF, Substitution (number of hundreds) 1S, Simplification 1CA, Answer OR 1SF, Substitution (number of hundreds) 1S, Simplification 1CA, Answer	L3 F (3)
2.1.4 (a)	P = R10 + R1,20 × 10 ✓MA = R10 + R12 = R22,00 ✓CA	1MA, Multiplying by 10 1CA, Answer	L2 F (2)
2.1.4 (b)	R34,00 = R10 + R1,20 × Q ✓SF $Q = \frac{R34 - R10}{R1,20}$ = 20 ✓S ∴ Q = 20 × R10 ✓MCA = R2 000 ✓A	1SF, Substitution (Q & R34 in the correct place) 1S, Simplification 1MCA, Multiplication 1A, Answer	L3 F (4)
2.1.4 (c)	R = R40,00 ✓RT	1RT, Reading the correct value	L2 F (2)

Que	Solution	Explanation	L/T
2.2.1	In order to check his or her credit record. ✓✓O OR To confirm that a person is working. ✓✓O OR To check the loan affordability. ✓✓O OR For security reasons. ✓✓O OR To avoid fraud. ✓✓O	20, Opinion	L4 F (2)
2.2.2	Total initiation fee = 4 × R100 ✓MA = R400 ✓CA	1A, Number of R100 1MA, Multiplication 1CA, Answer	L2 F (3)
2.2.3	Waiting time = 5 × 60 ✓C = 300 seconds ✓CA	1C, Conversions 1CA, Answer AO	L2 M (2)
2.2.4	Because, it is a one month loan service. ✓✓E OR Attract customers. ✓✓E	2E, Explanation	L4 F (2)

QUESTION 3 [15 marks]			LT
Que	Solution	Explanation	LT
3.1.1	$A = 2,8m - 1,8m$ $= 1m \div 2 \checkmark S$ $= 0,5m \checkmark A$	1M, Subtraction 1S, Dividing by 2 1A, Answer	L2 M (3)
3.1.2	$P = 2(2,8m + 2,0m) \checkmark SF$ $= 2(4,8m)$ $= 9,6m \checkmark CA$ OR $P = 2,8m + 2,0m + 2,8m + 2,0m \checkmark M$ $= 9,6m \checkmark CA$	1SF, Substitution 1CA, Answer OR 1M, Adding pair of sides 1CA, Answer AO	L2 M (2)
3.1.3	Area = $(2,8m \times 2,0m) - (1,8m^2) \checkmark SF$ $= 5,6m^2 - (1,8m^2) \checkmark S$ $= 3,8m^2 \checkmark CA$	1SF, Substitution 1S, Simplification 1CA, Answer	L2 M (3)
3.1.4	8f = 1 minute No of litres = 225 minutes $\checkmark C$ $= 225 \times 8f \checkmark M$ $= 1800f.$ Yes, His statement was correct. $\checkmark J$	1C, Conversion to min 1M, Multiplying a by 8f 1J, Justification	L4 M (3)
3.1.5	Energy saved = $\frac{\checkmark M}{0,8 \times 15Kwh}$ $= 12Kwh \checkmark A$ OR Energy used = 20% of 15Kwh $= 3Kwh \checkmark M$ Energy saved = 15Kwh - 3Kwh $= 12Kwh \checkmark A$	1M, Percentage concept 1A, Answer OR 1M, Percentage concept 1A, Difference	L1 M (2)
3.2	Cost per bag = $\frac{R5320}{70} \checkmark MA$ $= R76 \checkmark A$	1MA, Dividing 1A, Answer AO	L1 F (2) [15]

QUESTION 4 [18 marks]			TL
Que	Solution	Explanation	TL
4.1.1	No of tins height wise = $\frac{\checkmark C}{0,6 \times 100cm}$ $\checkmark M$ $= \frac{15cm}{4 \text{ tins}} \checkmark CA$	1C, Conversion 1M, Dividing heights 1CA, Answer AO	L3 M&P (3)
4.1.2	No of tins in one container = $3 \times 4 \times 4 \checkmark MCA$ $= 48 \text{ tins} \checkmark CA$	CA from Q4.1.1 1MCA, 12 tins by 4 1CA, Answer	L2 M&P (2)
4.1.3	No of containers = $\frac{200}{48} \checkmark MCA$ $= 4,166666667 \checkmark CA$ $= 5 \text{ containers} \checkmark R$	AO CA from Q4.1.2 1MCA, Dividing 1CA, Answer 1R, Rounding up	L2 M&P (3)
4.2.1	No of tables = $\frac{48}{8} \checkmark M$ $= 6 \checkmark CA$	1M, Dividing 1CA, Answer	L1 M&P (2)
4.2.2	To make the table extra strong. $\checkmark \checkmark O$ OR To minimize wobbling. $\checkmark \checkmark O$	2O, Opinion	L4 M&P
4.2.3	They must be hand tighten first, then tool D or allen key must be used to tighten completely. $\checkmark \checkmark E$	2E, Explanation	L1 M&P (2)
4.2.4	1,8 cm : 135cm $\checkmark MA$ 1 : 75 $\checkmark CA$	1MA, Scale concept and correct order 1CA, Answer	L3 M&P (2)
4.2.5	To give a clear procedure for people who cannot read or write (illiterate). $\checkmark \checkmark E$ OR To allow people to see how the object assemble looks like. $\checkmark \checkmark E$	2E, Explanation	L4 M&P (2)
			[18]

