higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MATHEMATICAL LITERACY
NQF LEVEL 2
(Second paper)

6 November 2024

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD/RM	Reading from a table/graph/drawing/document/map
F	Choosing correct formula
SF	Substitution in formula
MF	Manipulation of formula
R/J	Reasoning/Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off
E	Explanation

This marking guideline consists of 7 pages.

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QUESTION 1

Do not deduct marks if the 'R' sign is omitted. Full marks for the answer only unless stated otherwise.

QUESTION		SOLUTION	EXPLANATION	
1.1	1.1.1	Rectangle✓	1A	(1)
	1.1.2	Length = 3,1 m Breadth = 6 m – 3,8 m = 2,2 m✓	1M	
		A = length × breadth = 3,1 m × 2,2 m✓ = 6,82 m²✓	1M 1A	(3)
	1.1.3	Area of Bedroom = 3,8 m × 3,1m = 11,78 m Area of House = (8 m × 6 m) – 6,82 m = 41,18 m % Area = $\frac{11,78}{41,18} \times 100 = 28,61\%$	1 M 1M 1A	(3)
1.2	1.2.1	200 mm ÷ 1 000✓ = 0,2 m✓	1C 1A	(2)
	1.2.2	A = length × breadth = 0,2 m × 0,2 m✓ = 0,04 m²✓	1SF 1A	(2)
	1.2.3	Number of tiles: $\frac{11,78\ m^2}{0,04\ m^2}$✓ $= 294,5 \approx 295\ tiles$✓	2M 1A	
		Add 5 % extra: $\frac{5}{100} \times 295$✓ $= 14,75 \approx 15\ tiles$✓	1M 1A	
		295 + 15 = 310 tiles✓	1A	
		Number of boxes: $\frac{310\ tiles}{20\ tiles\ per\ box}$✓ $= 15,5$ $\approx 16\ boxes\ of\ tiles$✓	2M 1A	(7)
	1.2.4	Tiles might break when you are cutting or working. There might be tiles that cannot be used fully because of cutting and they might not be able to be used somewhere else.✓✓ TWO marks for any ONE reason. Accept other suitable answers.	2R/J	(2)
	1.2.5	CA from 1.2.3 (16 boxes × R120,45)✓ + (R80 × 11,78 m²)✓+ (5 × R79) ✓+ (2 × R110) ✓ = R1 927,20 + R942,40 + R 395,00 + R 220 ✓ = R 3 484,60✓	5M 1A	(6)

1.3	1.3.1	North-east (NE) ✓	1RM	(1)
	1.3.2	99 Favor Taste✓	1RM	(1)
	1.3.3	$AB^2 = AC^2 + BC^2$ $= 452^2$ ✓$+ 483^2$✓ = 204 304 + 233 289 = 437 593 AB $= \sqrt{437\ 593}$✓ = 661,51 m also accept 662 m✓	3M 1A	(4)
	1.3.4	No. ✓ You cannot walk in a straight line as you cannot walk through the buildings. OR You would use the streets/roads to get to your destination and that will not allow you to walk in a straight line in one direction. Accept any other reasonable/logical explanation. TWO marks for ONE reason.✓✓	1A 2R/J	(3)
1.4		19 mm × 150 000✓ = 2 850 000 mm✓	1M 1A	
		2 850 000 mm ÷ 1 000 ÷ 1 000✓ = 2,85 km✓	1M 1A	
		Rounded to 3 km✓	1R	(5) **[40]**

QUESTION 2

Do not deduct marks if 'R' sign is omitted. Full marks for the answer only, unless stated otherwise.

2.1	2.1.1	VAT has not been added.✓			1E	(1)
	2.1.2	Option 1(Flight):	R1 480 × $\frac{15}{100}$✓ =R222	OR	R1 480✓ ×$\frac{115}{100}$✓ = R1 702✓	2M
			R222 + R 1 480✓ = R1 702✓			1A
		Option 2 (Bus):	R480 × 2✓ = R 960✓			1M 1A
		Option 2 (Bus) is more economical. ✓			1C	(6)
	2.1.3	Flying is safer than traveling by bus. ✓✓ Flying is faster than traveling by bus. Accept any other logical explanation. ONE reason for 2 marks.			2R/J	(2)

2.2 R960✓ + (R450 × 5) ✓ + (R250 × 5) ✓ + (R60 × 5) ✓ + (R120 + R265 + R60 + R150) ✓
= R960 + R2 250✓ + R1 250✓ + R300✓ + R595 8M
= R5 355✓ 1A

OR
(R450✓ + R250✓ + R60✓) × 5✓
= R760✓ × 5
= R3 800✓
OR
Accommodation = R450 × 5✓ = R2 250✓
Food = R250 × 5✓ = R1 250✓
Transport = R60 × 5✓ = R300✓

IMPORTANT: Cost for accommodation, food and transport = 6 marks
Add travel per bus = 1 mark
Add all the entrance fees = 1 mark
Total expense = 1 mark (9)

2.3 2.3.1 So that you have money for emergency expenses.✓✓ 2E
For future use such as planning a trip.
It can be used in investments.
Accept any other logical explanation. ONE explanation for 2 marks. (2)

2.3.2 R1 500✓ + (R80 × 21) ✓ + R900✓ + R1 000✓ 4M
= R5 080✓ 1A

Surplus/Deficit = Income – Expenses
= R 5 080 – R 5 355✓ 1M
= - R275✓ 1A
Deficit of R275✓ 1C

IMPORTANT: If the answer stops with – R275 without the conclusion, then award 1 mark for the negative (deficit) and 1 mark for R275.
If the answer is simply R275, then the learner must indicate that it is a deficit. (8)

2.3.3 She can work more hours at the part-time job.✓✓ 2E
She can find another part-time job.✓✓ 2E
Do chores for people for money.
Find cheaper accommodation or transport.
Cut down on the sites that she wants to visit.
Ask friends to contribute to her travel fund. (2 × 2)
Accept any other logical suggestion. 2 marks per suggestion. (4)

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2.3.4	Pay-As-You-Use: R4 + R1,40 per R100			
	= R4 + R1,40 × 10✓	1M		
	= R4 + R14			
	= R18✓	1A		
	Access Account: R1,60 per R100✓	1M		
	= R1,60 × 10			
	= R16✓	1A		
	The parents must choose the Access Account. ✓	1C		
	The transaction fee is less/cheaper. ✓	1R/J	(6)	
2.3.5	ATM: Automatic Teller Machine✓	1A		
	EFT: Electronic Funds Transfer✓	1A	(2)	
			[40]	

QUESTION 3

Do not deduct marks if the 'R' sign is omitted. Full marks for the answer only unless stated otherwise.

3.1	3.1.1	Cost✓	1RT	(1)
	3.1.2	Direct proportion.✓	1A	
		As the number of people increase,✓ the cost also increases.✓	2R/J	(3)
	3.1.3	A: R1 000 + (R100 × 20) ✓	1SF	
		= R1 000 + R2 000		
		= R3 000✓	1A	(2)
	3.1.4	B: R6 500 = R2 000 + 75n✓	1SF	
		R6 500 – R2 000 = 75n		
		R4 500 = 75n		
		$n = \frac{R4\ 500}{R75}$✓	1M	
		= 60 people✓	1A	(3)
	3.1.5	<u>SHAKES EVENTS (TABLE 1)</u>		
		R1 000 + (R100 × 100) ✓	1SF	
		= R1 000 + R10 000		
		= R11 000✓	1A	
		<u>COOLIO SISTERS (TABLE 2)</u>		
		R2 000 + (R75 × 100) ✓	1SF	
		= R2 000 + R7 500		
		= R9 500✓	1A	
		COOLIO SISTERS (TABLE 2) will be the best. ✓	1C	
		COOLIO SISTERS are cheaper. ✓	1R/J	(6)

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	3.1.6	SHAKES EVENTS (TABLE 2) ✓	1A	
		The venue for SHAKES EVENTS is big enough. It can accommodate 200 people.✓✓ The venue for COOLIO SISTERS is too small. It can only accommodate 150 people. ONE reason for 2 marks	2R/J	(3)
	3.1.7	40 people✓✓	2RT	(2)
3.2	3.2.1	Days vs sanitizer stock✓ Rate of sanitizer use Any other appropriate answer	1A	(1)
	3.2.2	Indirect/Inverse✓ As the days increase,✓ the sanitizer stock decreases. ✓	1A 2R/J	(3)
	3.2.3	A – 3 B – 4 C – 5 D – 80 E – 60 F – 50	6A	(6)
	3.2.4	$\frac{100\ bottles✓}{10\ bottles\ per\ day✓} = 10\ days✓$	2M 1A	(3)
	3.2.5	On day 6 they would have used 60 bottles (6 × 10 per day) leaving them with 40 bottles in stock. Therefore, on day 6 the order will be made. ✓✓	2A	(2) **[35]**

QUESTION 4

Do not deduct marks if the 'R' sign is omitted. Full marks for the answer only unless stated otherwise.

4.1	4.1.1	December ✓	1RD	(1)
	4.1.2	Increase from June to July: =37 000 – 30 000✓ = 7 000✓	1M 1A	(2)
	4.1.3	Increase from April to May is =29 000 – 15 000✓ =14 000✓ Increase from June to July is 7 000.✓ The increase between the two periods is 7 000.✓	4A	(4)

4.2	4.2.1	Male Percentage $= \frac{42}{92} \times 100$✓ $= 45{,}65\%$✓	1M 1A	(2)
	4.2.2	Age group 51-65 years: = 92 – (0+9+7+36+12)✓ = 28✓	1M 1A	(2)
	4.2.3	Male Percentage $= \frac{18}{92} \times 100$✓ $= 19{,}57\%$✓	1M 1A	(2)
	4.2.4	No✓- 90 people out of 92 people answered.✓ or 2 people didn't answer.	1A 1R/J	(2)
	4.2.5	Current Smoker✓	1 RT	(1)
	4.2.6	Over 5 hours	1RT	(1)
4.3	4.3.1	Observation.✓ Lecturers collected the money from the learners, so they observed the students giving them money.✓	1A 1E	(2)
	4.3.2	Fact.✓ The money was collected, counted and recorded.✓	1A 1E	(2)
	4.3.3	R567✓ – R188✓ = R379✓	2RT 1A	(3)
	4.3.4	R294 ; R320 ; <u>R321</u> ; R470 ; R475✓ Median = R321✓	1M 1A	(2)
	4.3.5	R321✓✓	1RT	(2)
	4.3.6	Level 3 Mean/Average: $\frac{R1\,880✓}{5✓} = R376$✓	2M 1A	(3)
	4.3.7	Mean would be the best measure of central tendency since all values are used when calculating it.✓✓	2R/J	(2)
	4.3.8	R1 944 + R1 880✓ = R3 824✓	1M 1A	(2) **[35]**
			TOTAL:	**150**

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