higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MATHEMATICAL LITERACY

(Second paper)

NQF LEVEL 2

17 February 2025

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
CO	Conclusion

This marking guideline consists of 8 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	Perimeter = 2(length) + 2(breadth) = 2(100 m) ✓ + 2(60 m) ✓ = 200 + 120 = 320 m✓	2SF 1A	(3)
	1.1.3	$A = \pi r^2$ = 3,14✓ (9,15 m)² ✓ = 262,89 m²✓	2SF 1	(3)
	1.1.4	Area (field) = Length × Breadth = 100 m × 60 m✓ = 6 000 m²✓ Area (sods of grass) = Length × Breadth = 4 m × 1 m✓ = 4 m²✓ $\frac{6\,000\ m^2✓}{4\ m^2✓} = 1\,500\ sods\ of\ grass✓$	1SF 1A 1SF 1A 2M 1A	(7)
	1.1.5	Option 1: Cost of grass = 6 000 m² × R30/m²✓ = R180 000✓ Cost of labour = 6 000 m² × R10/m²✓ = R60 000✓ Total cost = R180 000 + R60 000 = R240 000✓ OR 6 000 m² ✓× (R30/m²✓ + R10/m²✓) = R240 000✓✓ Option 2: Cost of grass = 6 000 m² × R30/m² = R180 000 (marks awarded in Option 1) Cost of labour = R300 × 10 workers × 10 days✓ = R30 000✓ Total Cost = R180 000 + R30 000 = R210 000✓ Conclusion: Option 2 is more cost effective✓	1M 1A 1M 1A 1CA 1M 1A 1CA 1CO	(9)

1.2	1.2.1	11 windows✓	1RM	(1)
	1.2.2	✚✓	1RM	(1)
	1.2.3	North-east (NE) ✓	1RM	(1)
	1.2.4	• There could be an office fire so it's important to know the exits.✓✓ • Someone could be injured so you need to know where the first aid is.✓✓ • You need to know where the emergency phone is to call in case of emergency. • A small fire breaks out and you need to find the fire extinguisher. • The fire alarm needs to be checked and the floorplan indicates where it can be located. Any TWO reasonable explanations. 2 marks per explanation.	4E	(4)
	1.2.5	2 exits✓✓	1RM	(1)
	1.2.6	• Turn left (west) towards Office 3/Storage✓ • Turn left (south) after Storage/before Office 3✓ Students do not have to use west and south. Left as a direction is acceptable. Consider the wording carefully.	2E	(2)
	1.2.7	Yes✓ There is an emergency phone in Office 3✓✓	1A 1R/J	(3)
1.3		98 mm × 1 500✓ = 147 000 mm✓	1M 1A	(4)
		147 000 ÷ 1 000✓ = 147 m✓	1C 1A	**[40]**

QUESTION 2

Do not deduct marks if units are omitted, unless a mark is awarded for the unit. Full marks for the answer only, unless stated otherwise.

2.1	2.1.1	Fees for players: 16 teams × 18 players✓ × R200✓ = R57 600✓	2M 1A	
		Fees for coaches/managers: 16 teams × 2✓ × R100✓ = R3 200✓	2M 1A 1CA	
		Total Fees: R57 600 + R3 200 = R60 800✓		(7)

2.1.2 Powerflow: $\frac{15}{100} \times R1\,800 = R270$✓ 2M

R1 800 + R270✓ = R2070✓ 1A

OR $\frac{115}{100}$ ✓ $\times R1\,800$✓ $= R2\,070$✓

Enerjuice = R2 000

Energuice is more cost-effective.✓ 1CO (4)

2.2 2.2.1

BUDGET FOR SOCCER FESTIVAL				
INCOME			EXPENSES	
ITEM	AMOUNT		ITEM	AMOUNT
Sponsorship	✓R25 000		Food	✓R16 000
Entry fees	✓R53 200		Referees	✓R3 500
			Juice (Enerjuice)	✓R2 000
			Trophies	✓R1 800
TOTAL INCOME:	✓R78 200		TOTAL EXPENSE:	✓R23 300
PROFIT/LOSS = INCOME – EXPENSES: R78 200 – R23 300 = R54 900✓				

1 mark each correct entry

1A (9)

2.2.2 Prepare for emergencies
Achieve financial goals
Prevents overspending
Creates financial stability
Reveals spending habits.
2 marks for any ONE explanation. Accept any other reasonable answers.✓✓ 2E (2)

2.2.3 They can have food stalls.
Get more sponsors involved.
Charge more fees for entries for teams.
Charge an entry fee for spectators.
Get volunteers involved.
2 marks for any ONE suggestion. Accept any other reasonable suggestion.✓✓ 2E (2)

2.2.4 R25 000 ÷ R1 000 = 25✓ 1M

R40 + (R1,75 × 25) ✓ 1SF
= R40 + R43,75
= R83,75✓ 1A (3)

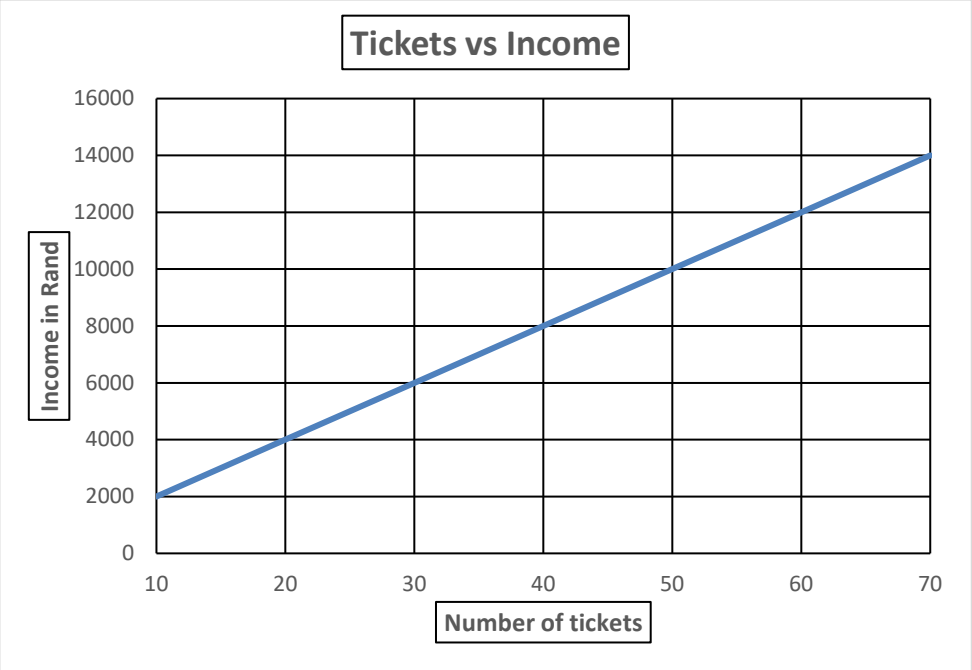
2.3	2.3.1	Option 1 (Zoom Taxis)		
		[R800 + (R3,60 × 75 km] ✓ × 2 taxis✓	1SF 1M	
		= (R800 + R270) × 2		
		= R1070 × 2		
		= R2140✓	1A	
		Option 2 (Zama Express)		
		R1 400 + (R2,80 × 75 km) ✓	1SF	
		= R1 400 + R 210		
		= R1 610✓	1A	
		Option 2 (Zama Express) is more cost-effective. ✓	1CO	(6)
	2.3.2	20 people ÷ 5 people per car = 4 cars		
		Cost per car = R180✓ + (R25,49/litre✓ × 8 litres) ✓	3M	
		= R180 + R203,92		
		= R383,92 ✓	1A	
		Total cost = R383,92 × 4 cars✓ = R1 535,68✓	1M 1A	
		Yes, using private cars is the most cost-effective. ✓ Accept any other suitable method.	1CO	(7) **[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	R200✓✓	2RT	(2)
	3.1.2	A: R4 000 ÷ R200✓ = 20 tickets✓	1M 1A	
		B: 30 tickets × R200✓ = R6 000✓	1M 1A	
		C: 50 tickets × R200✓ = R10 000✓	1M 1A	(6)

3.1.3



1 mark heading ✓
1 mark for each correct label of axis✓✓
1 mark (0;2 000) ✓
1 mark (70;14 000) ✓
1 mark for the shape of the graph (straight line) ✓ (6)

3.1.4 R40 000✓ ÷ R200✓ = 200 tickets✓ 2M 1A (3)

3.1.5 R40 000 × 2 = R80 000✓ 1M

R80 000 ÷ R200✓ = 400 tickets✓ OR 1M 1A

200 tickets✓ × 2✓ = 400 tickets✓ (3)

3.1.6 Direct proportion✓ 1A
As the number of tickets increase,✓ the income increases.✓ 2R/J (3)

3.1.7 Dependent: Income✓ 1A
Independent: Number of tickets✓ 1A (2)

3.1.8 Increasing relationship✓- the income increases as the number of tickets sold increases. ✓ 2R/J (2)

3.2 3.2.1 500 ✓ ; 250 ✓ ; 125. ✓ 2A (3)

3.2.2 Geometric (Constant ratio) pattern✓ 1A
Every time you must divide by 2 to determine the next number.✓✓ 2R/J (3)

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3.2.3	2 000 ÷ 4 000✓ = $\frac{1}{2}$ ✓ Or 1 000 ÷ 2 000✓ = $\frac{1}{2}$ ✓	1M 1M	(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	June✓ Match 1✓	2RT	(2)
	4.1.2	Fact✓ The number would have been recorded by the gate✓✓	1A 2R/J	(3)
	4.1.3	Observation✓ An observer would watch people entering the gate.✓✓	1A 2R/J	(3)
	4.1.4	May: $\frac{3\,910✓}{4✓} = 977{,}5$ *also accept* 978✓	2M 1A	
		June: $\frac{4030✓}{4✓} = 1\,007,5$ *also accept* 1 008✓	2M 1A	
		June had the highest average attendance.✓	1CO	(7)
	4.1.5	People might not have money at the end of the month to attend a soccer match. ✓✓ Accept any other reasonable explanation.	2E	(2)
	4.1.6	1 128✓ – 559✓ = 569✓	2M 1A	(3)
	4.1.7	$\frac{1\,221 + 843✓}{2✓} = \frac{2\,064}{2} = 1\,032$✓	2M 1A	(3)
	4.1.8	Lower the price for a ticket. ✓✓ Sell season tickets Sell family packages One suggestion for 2 marks. Accept any other reasonable suggestion.	2E	(2)
4.2	4.2.1	Males✓	1RG	(1)
	4.2.2	100✓ – (52 + 32) ✓ = 16%✓	2M 1A	(3)

4.2.3	$\frac{52}{100}$ ✓ $\times 1\,246$✓ $= 647{,}92$✓ ≈ 648✓	1M 1RT 1A 1R	(4)
4.2.4	Yes✓ It is good for visualization.✓ It adds up to a whole e.g. 100% It shows a part of a whole. Any other reasonable reason.	1A 1R/J	(2)
			[35]
		TOTAL:	**150**

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