higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MATHEMATICAL LITERACY
NQF LEVEL 2
(First paper)

5 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 the 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 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 differently.)

QUESTION		SOLUTION	EXPLANATION	
1.1	1.1.1	$(8 + 18) – 52 \div 2$ $= 26 – 26$✓ $= 0$✓ Answer only = 1 mark	1M 1A	
	1.1.2	$\sqrt{121} + 2^3$ $= 11 + 8$✓ $= 19$✓ Answer only = 1 mark	1M 1A	
	1.1.3	½ of 600 – (-250) $= 300 + 250$✓ $= 550$✓ Answer only = 1 mark	1M 1A	
			(3 × 2)	(6)
1.2		24 ; 8 ; 0 ; -35 ✓ ✓	2A	(2)
1.3		$\frac{80}{178} \times 100$✓ $= 44{,}94\ \%$✓ Rounded to 45%✓ Or $\frac{98}{178} \times 100$✓ $= 55,\%$✓ 100% - 55% = 45%✓	1M 1A 1R	(3)
1.4		$\frac{8}{100} \times R8\ 650 = R692$✓ $\frac{92}{100}$ ✓ $\times R8\ 650$✓ $= R7\ 958$✓ R8 650 – R692✓ = R7 958✓ **OR**	2M 1A	(3)
1.5		3,85 km × 1 000✓ = 3 850 m✓	1M 1A	(2)

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1.6 Morgan : Lufefe
2 : 3 = 5 parts

2 + 3 = 5 parts

1 part = R5 200 ÷ 5 = R1 040

Morgan: $\frac{2}{5} \times R5\ 200$✓ $= R2\ 080$✓

Morgan = R1 040 × 2✓ = R2 080✓ 1M 1A

Lufefe: $\frac{3}{5} \times R5\ 200$✓ $= R3\ 120$✓

Lufefe = R1 040 × 3✓ = R3 120✓ 1M 1A

OR (4)

1.7 1.7.1 $Speed = \frac{distance}{time}$

$= \frac{13,6✓}{2✓} = 6,8\ km/h$✓ 2SF 1A (3)

1.7.2 14:08 + 2 hours ✓= 16:08✓ 1M 1A (2)

1.8 Option 1/Mega Box: $\frac{R530}{120}$✓ $= R4,42$ per nappy✓ 1M 1A

Option 2/ Carry Bag: $\frac{R184}{44}$✓ $= R4,18$ per nappy✓ 1M 1A

Option 2/Carry bag is more economical. ✓ 1 R/J (5)

[30]

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 differently.)

2.1 2.1.1 7 windows 1RD (1)

2.1.2 Area = length × width
= 4,2 ✓× 3,4✓ 2SF
= 14,28 m²✓ 1A (3)

2.1.3 Rectangle 1RD (1)

2.1.4 Height = 10 cm ÷ 100✓ = 0,1 m✓ 2C

Volume = Length × Width × Height
= 8 m × 7 m × 0,1 m✓ 1SF
= 5,6 m³✓ 1A (4)

2.1.5 Separated✓ 1RM
There is a wall (thick line) between the toilet and the bath.✓ 1R/J (2)

2.1.6 Yes 1RD (1)

2.2 2.2.1 North West (also accept NW)✓✓ 2RM (2)

2.2.2 Adendorp,✓ Graaff-Reinet,✓ Nieu-Bethesda 2RM
(Any TWO answers) (2)

	2.2.3	1:500 000✓✓	2RM	(2)
	2.2.4	One unit on the map✓ is equal to 500 000 units in real life/on the ground.✓	2RM	
		OR		
		The relationship (or ratio) between distance on a map and the corresponding distance on the ground.		
		OR		
		1 mm = 500 000 mm		
		OR		
		1 cm = 500 000 cm		
		Do not accept 1 m = 500 000 m, as we do not measure in meters on a map.		(2)
	2.2.5	13,26 cm × 500 000✓ = 6 630 000 cm✓	1M 1A	
		6 630 000 cm ÷ 100 ÷ 1 000✓ = 66,3 km✓	1C 1A	(4)
2.3	2.3.1	True✓	1A	
		A right angle between side A and side B that indicates that the sides are perpendicular to one another. ✓	1R/J	(2)
	2.3.2	$c^2 = a^2 + b^2$		
		$= 2^2$✓ $+ 4^2$✓	2SF	
		$= 4 + 16$		
		$= 20$✓	1CA	
		$c = \sqrt{20} = 4{,}47$ m✓	1A	(4)
				[30]

QUESTION 3: (Do not deduct marks if the 'R' sign is omitted. Full marks for the answer only unless stated differently.)

3.1	3.1.1	Commission from sales	1RT	(1)
	3.1.2	Rent, Car payment, Insurance (any ONE answer)	1RT	(1)
	3.1.3	A: R6 000 + R8 100 ✓= R14 100✓	1M 1A	
		B: R14 100 – R13 745✓ = R355✓	1M 1A	(4)
	3.1.4	Surplus	1RT	(1)

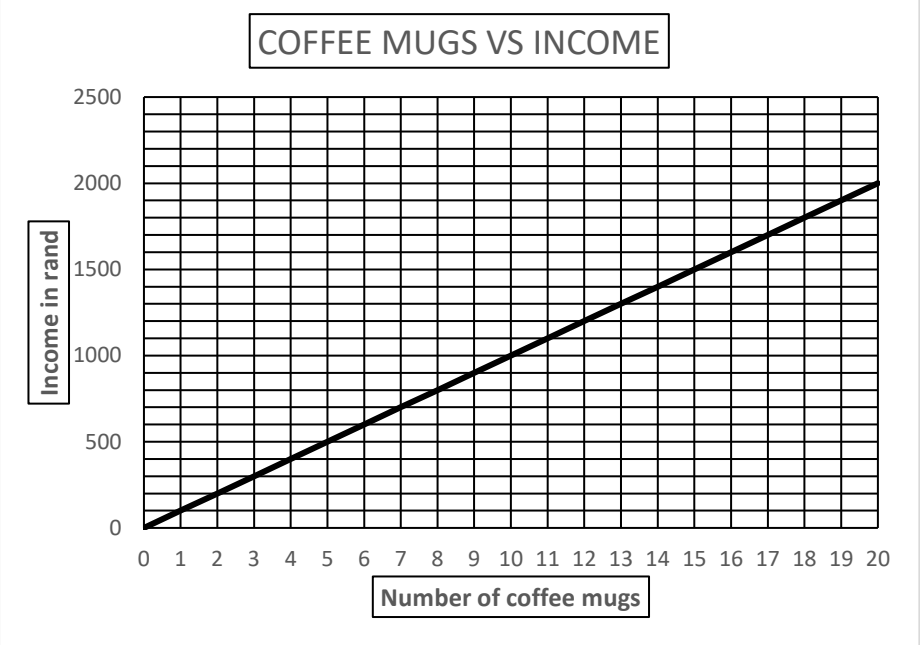
	3.1.5	He must increase his income.✓ He must decrease his expenses. Consider when examples are given e.g. He must cut down on entertainment. He must increase his commission from sales, etc. Accept any ONE reasonable/applicable answer.	1E	(1)
	3.1.6	$\frac{R470✓}{R0{,}89/minute✓} = 528{,}09✓$ = 528 minutes✓	1RT 1M 1A 1R	(4)
	3.1.7	R6 000 ÷ R100 = 60✓ R70 + R1,50(60) ✓ = R70 + R90 = R 160✓	1M 1SF 1A	(3)
	3.1.8	$\frac{R5\ 200✓}{R50✓} = 104\ sales✓$	2M 1A	(3)
3.2	3.2.1	Invoice✓	1RD	(1)
	3.2.2	VAT has not been included or added to the price. ✓	1E	(1)
	3.2.3	2 × brake pads✓ 3 × fan belts✓ Award the marks if only the item, and not the quantities, has been mentioned.	2RT	(2)
	3.2.4	15 June 2024✓	1RT	(1)
	3.2.5	A: R263 × 3 ✓= R789✓ **OR** R1 559 – R770 = R789	1M 1A	(2)
	3.2.6	B: $\frac{15}{100}$ ✓ × $R1\ 559$✓ = $R233{,}85$✓	2M 1A	(3)
	3.2.7	C: R1 559 + R233,85 ✓= RR1 792,85✓	1M 1A	(2) **[30]**

QUESTION 4: (Do not deduct marks if the 'R' sign is omitted. Full marks for the answer only unless stated differently.)

4.1	4.1.1	64✓ ; 128✓	2A	(2)
	4.1.2	36✓ ; 45✓	1RG	(2)
	4.1.3	Constant ratio.✓ One multiplies each number with 2 every time.✓	1A 1R/J	(2)

4.2	4.2.1	A:	$50 \div 5$✓ $= 10$ hours✓	1M 1A	
		B:	$50 \div 5$✓ $= 10$ painters✓	1M 1A	(4)
	4.2.2	Number of painters. Also accept 'Painters'✓		1A	(1)
	4.2.3	Time taken to paint. Also accept 'Time'✓		1A	(1)
	4.2.4	Indirect.✓ As the number of painters increases,✓ the time to paint the wall decreases.✓		1A 2R/J	(2)
	4.2.5	25 000/10 = 2500 for ten painters ✓ 2500/5 hours = R 500 per hour ✓		1 A 1 A	(2)
4.3	4.3.1	R100		1RT	(1)
	4.3.2	20 coffee mugs		1RT	(1)
	4.3.3	C:	1 000 ÷ 100✓ = 10 coffee mugs✓	1M 1A	
		D:	15 × R100✓ = R1 500✓	1M 1A	(4)

4.3.4



1 mark heading (Any acceptable variation)
1 mark label y-axis
1 mark label x-axis
1 mark (0;0) starting point
1 mark (20; 2 000) ending point
1 mark shape of graph (straight line) (6)

	4.3.5	Number of coffee mugs sold. Also accept 'Coffee Mugs'	1A	(1)
	4.3.6	Increasing relationship	1A	(1)

[30]

QUESTION 5: (Full marks for the answer only unless stated differently.)

5.1	5.1.1	Interview✓ She asked a question and it was answered.✓	1A 1R/J	
	5.1.2	A = 7✓ B = 8✓	2A	
	5.1.3	C = 𝍸 𝍸 𝍸 𝍸 ✓ D = 𝍸 ✓	2A (3 × 2)	(6)
	5.1.4	5 + 7 + 22 + 20 + 8 + 4✓ = 66✓	1M 1A	(2)
	5.1.5	Romance	1RT	(1)
	5.1.6	$\frac{20}{66}$ ✓ × 100✓ = 30,3 %✓ Therefore = 30 %✓	2M 1A 1R	(4)
5.2	5.2.1	Observation	1A	(1)
	5.2.2	15 to 20 January 2024 Do **NOT** accept Monday to Sunday as these are days, not dates.	1RG	(1)
	5.2.3	Fact	1A	(1)
	5.2.4	Wednesday Also accept 17 January 2024	1RG	(1)
	5.2.5	Thursday✓ and Friday✓ Also accept 18 and 19 January 2024	2RG	(2)
	5.2.6	10 – 2✓ = 8 mm✓	1M 1A	(2)
	5.2.7	$\frac{6 + 5 + 10 + 2 + 2 + 8 + 3✓}{7✓} = 5,14$ mm✓ Also accept 5 mm	2M 1A	(3)

5.3	5.3.1	Science	1RG	(1)
	5.3.2	100 – (23 + 10 + 24)✓ = 43 %✓	1M 1A	(2)
	5.3.3	$\frac{100}{10}$ ✓ × 20✓ = 200 learners✓	2M 1A	
		OR		
		If 10% is equal to 20 learners, then 100% is equal to 20 × 10 = 200 learners.		
		Accept any other suitable method.		(3)
				[30]
			TOTAL:	**150**

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