



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## MARKING GUIDELINE

**NATIONAL CERTIFICATE (VOCATIONAL)**

**MATHEMATICAL LITERACY**

(Second paper)

**NQF LEVEL 4**

**25 February 2020**

**This marking guideline consists of 7 pages.**

SYMBOL	EXPLANATION
M	Method
A	Accuracy
MA	Method with consistent accuracy
CA	Consistency accuracy
RT/RM/RG	Reading from a table/map/graph
U	Unit
SF	Substitution in formula
MF	Manipulating formula
C	Conversion
R/J	Reasoning/Justification
R	Rounding

- Penalise ONCE only for incorrect rounding.
- Do not penalise if rand (R) has been omitted.

**QUESTION 1**

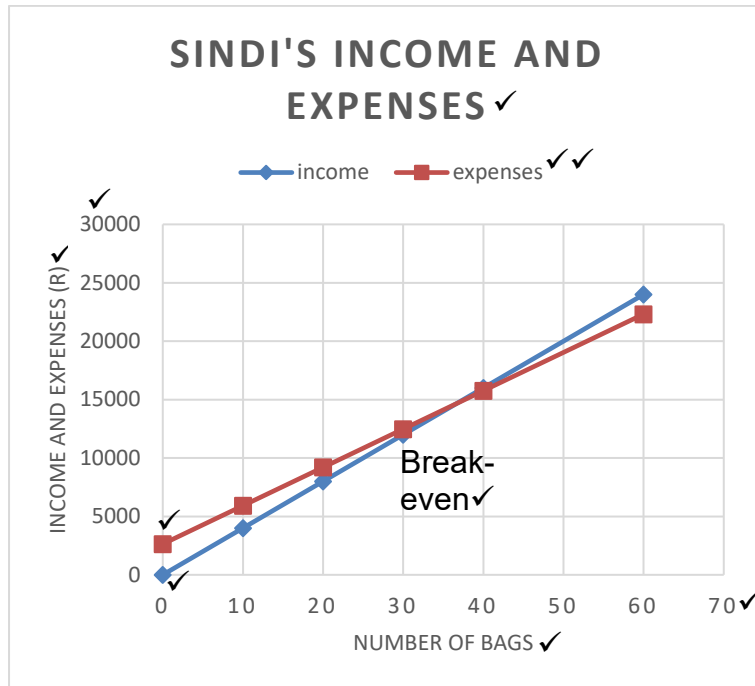
1.1	1.1.1	$A = 30\,652 - 29\,302 \checkmark$ $= 1\,350 \checkmark$ $B = 25\,152 - 762 \checkmark$ $= 24\,390 \checkmark$ $C = 23\,055 - 23\,052 \checkmark$ $= 3 \checkmark$ $D = 24\,734 \checkmark \checkmark$	1MA 1A 1MA 1A 1MA 1A 2A	(8)
	1.1.2	$\frac{177 \checkmark}{11\,598 \checkmark} \times 100 \checkmark$ $= 1,53\% \checkmark$	2MA 1M 1A	(4)
	1.1.3	Cash deposit $\checkmark \checkmark$	2A	(2)
1.2	<b>Bank A:</b> Cash deposits $4,54 + (1,41 \times 14)$ $= 24,28 \checkmark$ $24,28 \times 4$ $= 97,12 \checkmark$  Statements $7,06 \times 2$ $= 14,12 \checkmark$  Total $97,12 + 3,78 + 14,12 + 60,53 \checkmark$ $= R175,55 \checkmark$  <b>Bank B:</b> Cash deposits $1,82 \times 14$ $= 25,48 \checkmark$ $25,48 \times 4$ $= 101,92 \checkmark$  Statements $5,04 \times 2$ $= 10,08 \checkmark$  Total $101,92 + 4,54 + 10,08 + 16,64 + 8,83 \checkmark$ $= R142,01 \checkmark$  She should choose bank B as it is cheaper. $\checkmark$	1MA  1A   1A  1CA 1A  1MA  1A  1CA 1A	(11)	

1.3	$35\,253 + 26\% \text{ of income above } 195\,850 \checkmark$ $= 35\,253 + 26\% \text{ of } (264\,835 - 195\,850) \checkmark$ $= 35\,253 + \left(\frac{26}{100} \times 68\,985\right) \checkmark$ $= 35\,253 + 17\,936,10$ $= 53\,189,10 \checkmark$ $53\,189,10 - 14\,067 \checkmark$ $= 39\,122,10 \checkmark$ $39\,122,10 \div 12$ $= 3\,260,18 \checkmark$ Yes, it is correct $\checkmark$	1RT 1SF 1M  1A 1M 1A  1A 1 R/J	(8)
1.4	1.4.1 $A = 251 + \checkmark \left(251 \times \frac{11,16}{100}\right) \checkmark$ $= R279,01 \checkmark$  $B = \frac{13,05 - 12,38}{12,38} \checkmark \times 100 \checkmark$ $= 5,41 \checkmark \%$	2M 1A  2M 1A	(6)
	1.4.2 No, $\checkmark$ A large number of goods are used to calculate inflation and Sindi only used three. $\checkmark$	2R/J	(2) <b>[41]</b>

**QUESTION 2**

2.1	2.1.1 Income = $400 \checkmark \times \text{number of bags} \checkmark$	2A	(2)
	2.1.2 Expenses = $2\,639 \checkmark + 328 \checkmark \times \text{number of bags} \checkmark$	3A	(3)
	2.1.3 A = $16\,000 \checkmark \checkmark$ B = $2\,639 \checkmark \checkmark$ C = $12\,479 \checkmark \checkmark$ D = $1\,681 \checkmark \checkmark$	2A 2A 2A 2A	(8)
	2.1.4 Accept any answer between 30 and 40. $\checkmark \checkmark$	2A	(2)

2.1.5



1 heading  
 1 label x-axis  
 1 label y-axis  
 1 scale x-axis  
 1 scale y-axis  
 1 break-even point shown  
 2 for correct graphs  
 2 for labelling graphs

(10)

2.2	2.2.1	She is making a loss	2RG	(2)
	2.2.2	-R500 or R500 loss	2RG	(2)
	2.2.3	Direct/increasing ✓ – as the number of bags sold increases, the profit also increases. ✓✓	1A 2R/J	(3)
	2.2.4	Profit ✓ – the profit made depends on the number of bags sold. ✓✓	1A; 2R/J	(3)
				<b>[35]</b>

**QUESTION 3**

3.1 3.1.1  $\bar{x} = \frac{682\checkmark}{20\checkmark}$  2M  
 $= 34,1\checkmark$  1A (3)

3.1.2 Mode = 18 ✓ 1 A (1)

3.1.3 Median =  $\frac{35+37\checkmark\checkmark}{2}$  2 M  
 $= 36\checkmark$  1A (3)

3.1.4 Range = 60 – 18 1 M  
 $= 42$  1A (2)

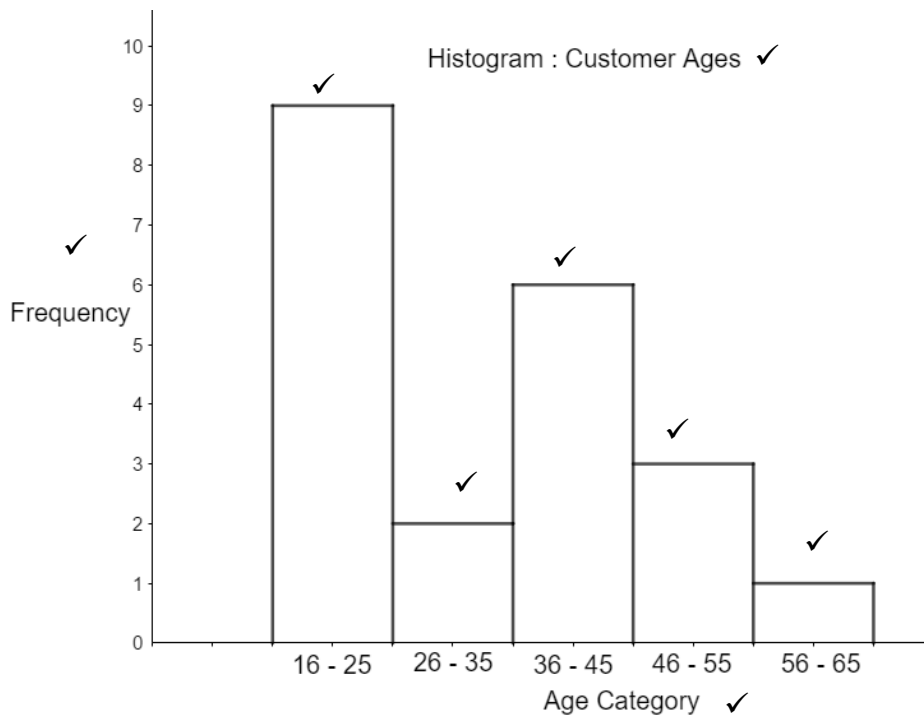
3.1.5

Age Group	Tally	Frequency
16 – 25	//// /	8 ✓
26 – 35	//	2 ✓
36 – 45	//// /	6 ✓
46 – 55	///	3 ✓
56 – 65	/	1 ✓
Total		20 ✓

Learner can show any method for tally

1 mark each correct tally & frequency  
 1 mark for total (6)

3.1.6 1 heading  
 2 labels for both axes  
 5 correct bars



(8)

3.2	3.2.1	126 ✓✓	2A	(2)
	3.2.2	$\frac{24✓}{126✓} = \frac{4}{21}✓$	2RT 1S	(3)
	3.2.3	$\frac{2✓}{20✓}$ = 10%✓	2RT 1A	(3)
	3.2.4	$\frac{6+5+3✓}{24✓}$ = $\frac{14}{24}✓$ = 0,58✓	2M 1S 1 A	(4) <b>[35]</b>

**QUESTION 4**

4.1	4.1.1	$c^2 = a^2 + b^2$ $c^2 = 15^2 + 15^2✓$ $c = \sqrt{450}✓$ $c = 21,21✓$ cm	1SF 1S 1A	
		width = $21,21 \times 3✓$ = 63,63✓ cm	1M 1A	(5)
	4.1.2	Height = $21,21 \times 2✓$ = 42,42 cm✓	1CA 1A	
		A = Width $\times$ Height = $0,6363 \times 0,4242✓$ = 0,2699 = $0,27 \text{ m}^2✓✓$	1SF 1A + 1 R	
		Or		
		A = Width $\times$ Height = $63,63 \times 42,42✓$ = 2699,18 cm <sup>2</sup> = $0,27 \text{ m}^2✓✓$		(5)
4.2	4.2.1	$V = L \times B \times H$ $15\ 552 = 432 \times H✓$ $H = 15\ 552 \div 432✓$ = 36✓ cm	1SF 1MF 1A	(3)

4.2.2	$A = L \times B$ $432 = 36 \times B \checkmark$ $B = 432 \div 36 \checkmark$ $= 12 \checkmark \text{cm}$  $P = 2L + 2B$ $= 2(36) + 2(12) \checkmark$ $= 96 \checkmark \text{cm}$	1SF 1MF 1A  1SF (CA) 1A	(5)	
4.2.3	$1,6 \times 100$ $= 160 \text{cm} \checkmark$ $160 \div 12 \checkmark$ $= 13,33$ $\approx 13 \text{ bags} \checkmark$ $45 \div 13 \checkmark$ $= 3,46 \checkmark$ $\approx 4 \text{ shelves} \checkmark$	1C 1M  1R 1M 1A 1R	(6)	
4.3	4.3.1	Every unit on the map represents 744000 units on the ground. $\checkmark \checkmark$	2K	(2)
	4.3.2	$2,5 \times 744\,000 \checkmark$ $= 1\,860\,000 \checkmark$ $1\,860\,000 \div 100\,000 \checkmark$ $= 18,6 \checkmark \text{km}$	1M 1A 1C 1A	(4)
	4.3.3	$24,2 \times 1\,000\,000 \checkmark$ $= 24\,200\,000 \checkmark \text{mm}$ $24\,200\,000 \div 744\,000 \checkmark$ $= 31,27 \checkmark$ $\approx 31 \checkmark \text{mm}$	1C 1A 1M 1A 1R	(5)
	4.3.4	$R310 \checkmark$ $M4 \checkmark$ Accept M6 , M65 , M66	1A 1A	(2)
	4.3.5	South-west $\checkmark \checkmark$	2A	(2)
				<b>[39]</b>
			<b>TOTAL:</b>	<b>150</b>