



# 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

- ## QUESTION 1

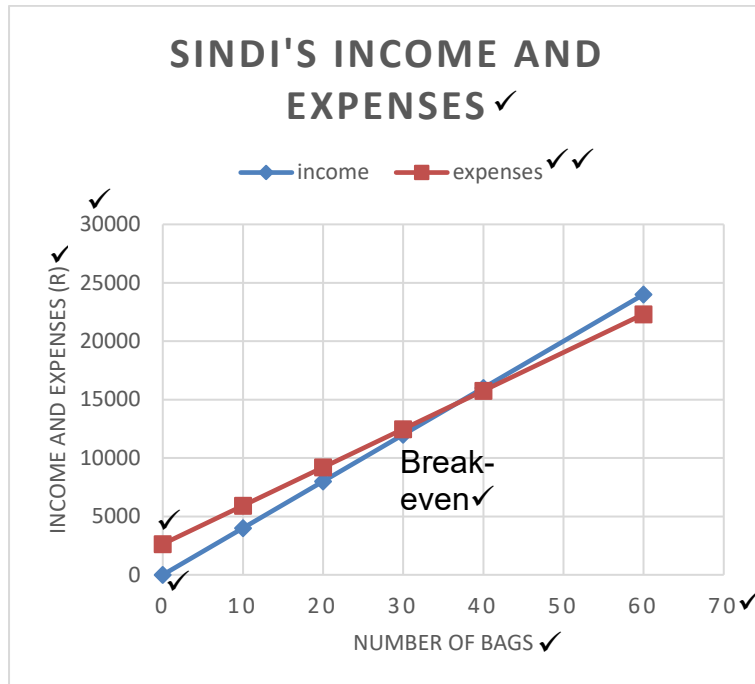
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1.3	$35\,253 + 26\% \text{ of income above } 195\,850 \checkmark$ $= 35\,253 + 26\% \text{ of } (264\,835 - 195\,850) \checkmark$ $= 35\,253 + \left(\frac{26}{100} \times 68\,985\right) \checkmark$ $= 35\,253 + 17\,936,10$ $= 53\,189,10 \checkmark$ $53\,189,10 - 14\,067 \checkmark$ $= 39\,122,10 \checkmark$ $39\,122,10 \div 12$ $= 3\,260,18 \checkmark$ 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)
				[35]

**QUESTION 3**

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

3.1.2 Mode = 18 ✓ 1 A (1)

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

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

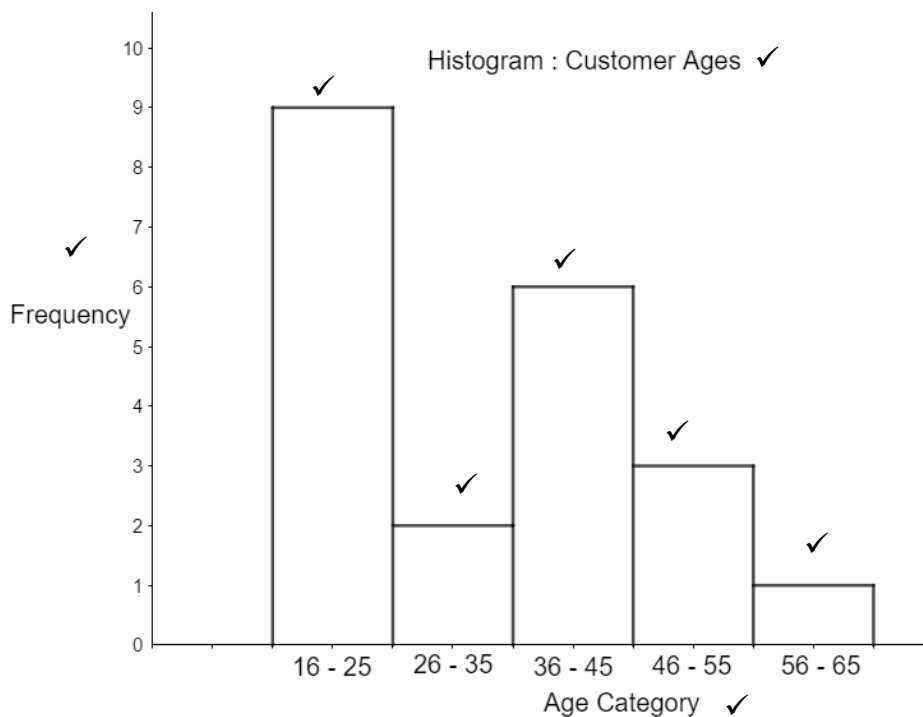
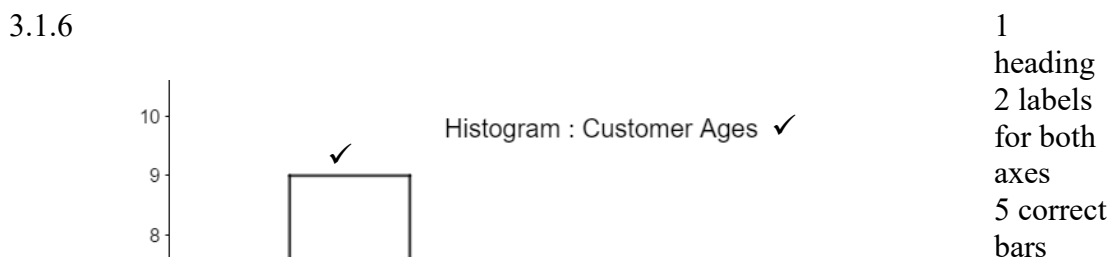
3.1.5

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

1 mark each correct tally & frequency  
 1 mark for total

Learner can show any method for tally

(6)



(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) [35]

**QUESTION 4**

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

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