NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2020

MATHEMATICAL LITERACY: PAPER II

MARKING GUIDELINES

Time: 3 hours 150 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

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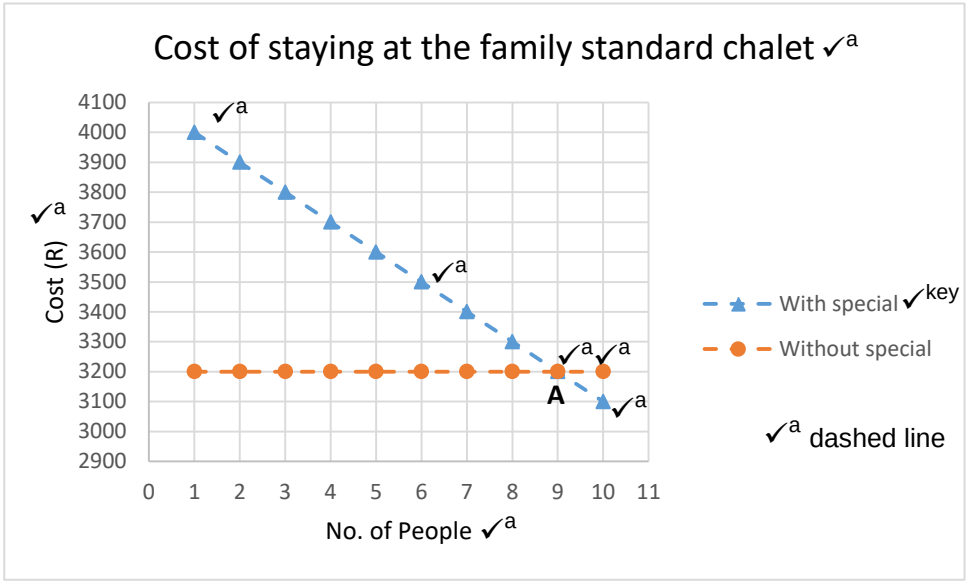
QUESTION 1

1.1	Because of inflation and not increasing their rates, they are earning less than they did. ✓a✓a	(2)
1.2.1	Average $= \frac{6,34 + 5,27 + 4,62 + 4,38 + 5,17}{5}$ ✓a✓a $= \frac{25,78}{5}$ ✓ca = 5,156✓ca	(4)
1.2.2	The additional years given show predictions relating to the inflation rate in the future based on the trends achieved in the previous years. ✓a✓a	(2)
1.3.1	Standard: $2400 \times \underset{\checkmark^{m}}{105,16\%}$ ✓a = R2 523,84 $= 2533,84$ ✓a ≈ R2 500 ✓round Family Standard: $3000 \times 105,16\% = 3\ 154,80$ ✓a ≈ R3 200 **OR** Standard: 2 400 × $\underset{\checkmark^{m}}{5,16\%}$ ✓a = R123,84 ✓a = R2 523,84 ≈ R2 500 ✓round Family Standard: 3 000 × 5,16% = R154,80 = R3154,80✓a ≈ R3 200	(5)
1.3.2	$\frac{5800 - 5200\checkmark^{a}}{5200\checkmark^{a}} \times 100 = 11,54\%$ ✓a **OR** $\left(\frac{5\ 800}{5\ 200} \times 100\%\right)\checkmark^{a} - 100\% = 11,54\%$ ✓a	(3)
1.4.1		(3)

Number of people	0	1	2	3	4	5	8	9	10
Cost per night (R)	4 000	3 900	**3 800** ✓a	**3 700**	**3 600**	**3 500**	**3 200** ✓a	**3 100**	**3 000** ✓a

1.4.2	C = 4 000 – 100 n ✓a✓a✓a **OR** 4 000 – 100 × n	(3)

1.4.3 1.4.4	 3 accuracy marks on the graph – (1 ; 4 000), (5 ; 3 600), (10 ; 3 100)	(8) (2)
1.4.5	9 or 10 ✓a✓a	(2)
1.5.1	1,6 cm ✓a × 1 200 ✓m✓a = 1 920 cm ✓a✓unit ***This question to be checked off printed copy	(5)
1.5.2	Volume $= \pi\left(\frac{1\,920}{2}\right)^2$ ✓a $\times 10$ ✓ma✓formula $= 28\ 952\ 917{,}9\ \text{cm}^3$ ✓ca.1	(4)
1.5.3	$28\ 952\ 917{,}9 \div$ ✓m $(100)^3$ ✓a $= 28{,}95\ \text{m}^3$ $28{,}95 \times 469$ ✓m $= \text{R}13\ 578{,}92$ ✓ca ∴ He will not have enough ✓a	(5)
1.5.4	Circumference $= 19{,}2 \times \pi$ ✓m $= 60{,}31$ m ✓ca $\frac{60{,}31\ ✓^{ca}}{2{,}5\ ✓^{a}} = 24{,}1$ ✓ca ≈ 24 stumps ✓car **OR** Circumference $= 2 \times \pi \times 9{,}6$ ✓m $= 60{,}31$ m ✓ca $\frac{60{,}31\ ✓^{ca}}{2{,}5\ ✓^{a}} = 24{,}1$ ✓ca ≈ 24 stumps ✓car	(6)
		[54]

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QUESTION 2

2.1.1	11×24 ✓m $= 264$ hours/year ✓a $\frac{264}{261}$ ✓m $= 1{,}011$ hours/day/driver ✓a	(4)
2.1.2	d = 264 hrs × 50 km/h ✓ma = 13 200 km ✓ca $\frac{13\ 200}{100}$ = 132 ✓ca 132 × 9,4 L ✓a = 1 240,8 L ✓ca 1 240,8 L × R 15,84 ✓ma = R19 654,27 ✓ca OR D = 50 km/h × 1 h (rounded off answer from 2.1.1) D = 50 km 9,4L : 100 km 4,7L : 50 km 4,7 L × R15,84 = R74,45 per day R74,45 × 261 working days = R19 430,93 Using 1,011 hours = R19 644,67 Using 1,01 hours = R19 625,24	(7)
2.2.1	1 306 – 41 ✓m = 1 265 ✓a	(2)
2.2.2	49 ✓m × 0,25 ✓a = 12,25 hours ✓ca 12:15 ✓ca	(4)
		[17]

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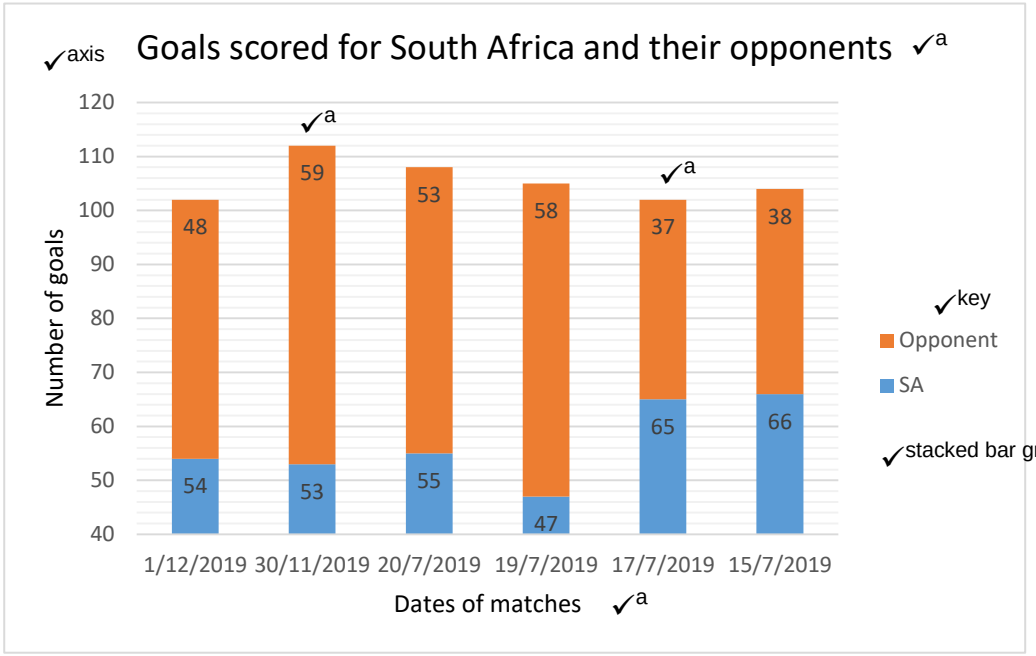
QUESTION 3

3.1.1	7 ✓a✓a	(2)
3.1.2	Upper 25% 33–36 years old ✓a Maryka Holtzhaussen = 33 years old ✓m✓a Erin Burger = 33 Years old ✓a Phumza Maweni = 36 years old ✓a	(5)
3.1.3	$29{,}5 = \frac{326 + x}{12}$ ✓a $29{,}5 \times 12$ ✓ma -326 ✓ma $= x$ $x = 28$ years old ✓ca No, her estimate is not correct ✓reason **OR** $\frac{326 + 29}{12}$ ✓a ✓ma ✓ma = 29,58 ✓ca ∴ Not correct ✓reason	(5)
3.1.4	1,9 × 3,28 = 6,232 ft ✓a 0,232 × 12 ✓m = 2,78 in ✓ca ∴ 1,9 m = 6 ft and 2,78 in ✓ca	(4)
3.1.5	Answers may vary: She may be new to the team **OR** she may not have been available when they were collecting the data✓a✓a **OR** she is a substitute player **OR** Impact player	(2)
3.1.6	$\frac{4}{12}$ ✓a ✓a $= \frac{1}{3}$	(2)
3.1.7	$\frac{4}{12}$ ✓a + ✓m $\frac{4}{12}$ ✓a $= \frac{8}{12} = \frac{2}{3}$ ✓a	(4)
3.2.1	20 000 + 25 000 + 75 000 + 1 000 000 ✓a✓m% = R 1 120 000 ✓a	(3)

3.2.2	R1 200 000 = 109% ✓a Therefore 1% = R11 009,17 ✓m 100% = R11 00917,43 ✓m✓ca **OR** Previous years amount = R1 200 000✓a ÷ ✓m1,09✓a = R1 100 917,43 ✓ca **OR** $\frac{1\,200\,000 - x}{x} \times 100 = 9\%$ ✓a $\frac{1\,200\,000}{x} - 1 = \frac{9}{100}$ ✓m $\frac{1\,200\,000}{x} = 0{,}09 + 1$ $1\,200\,000 \div 1{,}09 = x$ ✓m **OR** 1 200 000 ÷ 109% = x $x = \text{R}1\,100\,917{,}43$ ✓ca	(4)
3.3.1	47; 53; 54; 55; 65 Median = 54 ✓a✓a	(2)
3.3.2	47 + 11 ✓a✓m = 58 ✓a	(3)

3.3.3		(8)
3.4.1	Nottingham – London 11,8 cm ✓a London – Birmingham 10,9 cm ✓a Scale: 1,4 cm : 20 km 1,4 cm : 2 000 000 cm✓m 1 : 1 428 571,429 N – L : 11,8 × 1 428 571,429 ✓m = 168,57 km ✓a L – B : 10,9 × 1 428 571,429 = 155,71 km ✓a Total distance = 324,28 km **OR** N – L : 11,8 ÷ 1,4 × 20 ✓m = 168,6 km ✓a L – B : 10,9 ÷ 1,4 × 20 = 155,7 km ✓a Total distance = 168,6 + 155,7 ≈ 324 km	(6)
3.4.2	$\frac{37{,}28\ \checkmark^{m}}{0{,}621371\ \checkmark^{ma}} = 59{,}996\ \checkmark^{a} \approx 60$ km/h ✓justification	(4)
3.5.1	A player that is 1,78 m also has a 70% success rate. ✓a A player that is 1,83 m also has an 80% success rate. ✓a	(2)
3.5.2	The taller the player the higher the percentage of goals scored. ✓a✓a Player G is an outlier ✓a as she is not near the trendline, showing a tall height and low percentage goal rate. ✓a	(4)
		[60]

QUESTION 4

4.1	Monthly Salary: R14 000 UIF: - R 140 Pension: - R 102 ✓m Taxable Salary: R13 758 ✓a Annual Taxable Salary: 13 758 × 12 ✓ma = R165 096 ✓ca Income Tax: 165 096 × 18% ✓a✓m = 29 717,28 ✓ca R 29 717,28 Primary Rebate: - R 14 220,00 ✓ma Secondary Rebate: - R 7 794,00 ✓a R 7 703,28 ✓ca His statement is valid ✓ca	(11)
4.2	$14\,000 - \frac{5\,102{,}28}{12}$ ✓a – 140✓m = R13 434,81 ✓a	(3)
4.3	136 750 ✓a ÷ 12 ✓m = 11 395,83 ✓a 14 000 – 11 395,83 ✓ma = R 2 604,17 ✓ca	(5)
		[19]

Total: 150 marks

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