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MARKING GUIDELINES

EXAMINATION	NATIONAL SENIOR CERTIFICATE
GRADE	12
DATE	NOVEMBER 2024
SUBJECT	MATHEMATICAL LITERACY
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SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
MCA	Method with Consistent Accuracy
A	Accuracy
C	Conversion
D	Define
E	Explain
S	Simplification
RT/RG/RD	Reading from table/Reading from graph/Reading from diagram
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
RO	Rounding off
P	Penalty, e.g. for no units, incorrect rounding off, etc.
NP	No Penalty for e.g. no units, incorrect rounding off etc.
R	Reason
J	Justification

1. When working with percentages 7% = $\frac{7}{100}$ = 0,07 are all acceptable.

2. Penalise only once per category for the following mistake categories:
   a. Answer must be R52,90 and candidate writes R52,9 (zero missing)
   b. Answer on calculator R52,9055 and candidate writes R52,90 (ignored the 3rd decimal)
   c. Answer on calculator: R52,27 and candidate writes R52,30 (rounded up to the nearest 10, not asked)
   d. Answer on calculator: R52,9044 and candidates writes R52,91 (fundamental error for rounding)
   e. Answer on calculator: 52,9055 and candidates does not round to 2 decimals (money must be rounded to 2 decimal places without specifying)

3. Penalise only once for m^2 or m^3 omitted or incorrect.

4. Penalise only once for "R" not written when working in "Rand".

5. When working with foreign currencies, accept the foreign currency symbol OR the words. Penalise if the neither symbol nor word are used.

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QUESTION 1			[26]
No	**Answer**	**Description**	
1.1.1	456 5778 4500 ✓A✓A	2A 456 5778 4500 (2)	F L1
1.1.2	B ✓A✓A	2A B Also accept (Variable) (2)	F L1
1.1.3	False ✓A✓A	2A False (2)	F L1
1.1.4	C ✓A✓A	2A C Also accept $764{,}83 \times \frac{15}{100}$ (2)	F L1
1.1.5	A✓A✓A	2A A Also accept (Monthly service fee) (2)	F L1
1.1.6	2015/12/12 **OR** 12 December 2015 ✓A✓A	2A Correct date (2)	F L1
1.2.1	Discrete ✓A✓A	2A Discrete (2)	D L1
1.2.2	One million, three hundred and forty thousand. ✓A✓A	2A Correct wording (2)	D L1
1.2.3	False ✓A✓A	2A False (2)	D L1
1.2.4	Gauteng ✓A✓A	2A Gauteng (2)	D L1
1.2.5	True ✓A✓A	2A True (2)	P L1
1.2.6	C ✓A✓A	2A C Also accept $(\frac{7}{100} \times 360)$ (2)	D L1
1.2.7	A ✓A✓A	2A A Also accept (To represent parts of a whole) (2)	D L1
			[26]

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QUESTION 2			[38]
No	**Answer**	**Description**	
2.1.1	Year 1 = 30 000 + 0,072 x 30 000 ✓MA = R32 160 Year 2 = 32 160 ✓MCA + 0,072 x 32 160 = R34 475,52 ✓CA Interest Earned = 34 475,52 – 30 000 ✓MCA = R4 475,52 ✓CA **OR** 30 000 x 1,072 ✓MA = R32 160 32 160 x 1,072 = R34 475,52✓✓MCA Interest earned = 34 475,52 – 30 000✓MCA = R4 475,52✓CA **OR** Interest after 1 year = 30 000 x 0,072 ✓MA = R2 160 Balance after 1 year = 30 000 + 2 160 = R32 160✓MCA Interest after 2 years = 32 160 x 0,072 = R2 315,52✓MCA Interest earned after 2 years = 2 160 + 2 315,52 ✓MCA = R4 475,52✓CA	1MA 30 000 + 0,072 x 30 000 1MCA Using previous answer 1CA R34 475,52 1MCA Subtracting 1CA R4 475,52 **OR** 1MA 30 000 x 01,072 1MCA Using previous answer 1MCA R34 475,52 1MCA Subtracting 1CA R4 475,52 **OR** 1MA 30 000 x 0,072 1MCA 30 000 + 2 160 1MCA R2 315,52 1MCA Adding 1CA R4 475,52 (5)	F L3
2.1.2	Interest for 1 year = 30 000 x 0,084 ✓ MA = R2 520 Interest after 18 years = 2 520 x 18 ✓MCA = R45 360✓CA Total value = 30 000 + 45 360 ✓MCA = R75 360 ✓CA	1MA 30 000 x 0,084 1MCA Multiply by 18 1MCA 45 360 1MCA Adding 1CA 75 360 (5)	F L2
2.2.1	Compound Interest ✓A✓A	2A Compound Interest (2)	F L1
2.2.2	Simple Interest ✓A✓A	2A Simple Interest (2)	F L1
2.2.3	The graphs begin at 30 000 because this is the amount of the original investment. ✓R✓R	2R Any suitable reason (2)	F L4
2.3.1	2024 ✓✓RT	2RT 2024 (2)	F L1

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2.3.2	South African Revenue Service ✓A✓A	2A South African Revenue Service (2)	F L1
2.3.3	Medical tax credit = (364 + 364 + 246 + 246) ✓MA x 12 ✓M = 1220 x 12 = R14 640 ✓A	1MA 364 + 364 + 246 + 246 1M Multiply by 12 1A R14 640 AO FULL MARKS (3)	F L2
2.3.4	Primary rebate = R17 235 ✓✓RT	2RT R17 235 (2)	F L1
2.3.5	Annual tax payable: (237 101 – 370 500) ✓A = 42 678 + 0,26(350 000✓SF – 237 100) = 42 678 + 0,26(112 900) = 42 678 + 29 354 = R72 032✓CA Annual tax payable = (72 032 – 14 640 ✓MCA – 17 235 ✓MCA) Monthly tax payable = R40 157 ÷ 12 ✓MCA = R3 346,42✓CA	1A Correct tax bracket 1SF Substitution into formula 1CA R72 032 CA only if A or SF is correct 1MCA Minus CA from 2.3.3 1MCA Minus CA from 2.3.4 1MCA Divide with 12 1CA R3 346,42 Stop marking if they made a mistake at annual tax payable. Both – need to be correct to continue with last two marks. (7)	F L3
2.3.6	251 258 ✓A + 0,41(1 817 000✓SF –857 900) = 251 258 + 0,41(959 100) = 251 258 + 393 231✓S = R644 489	1A Correct tax bracket 1SF Substitution into formula 1S Simplifying (3)	F L4
2.3.7	Incorrect ✓A If he receives a bonus, it will be included in his annual gross salary ✓R✓R OR Bonus is part of a taxable income.	1A Incorrect 2R Any relevant reason (3)	F L4
			[38]

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QUESTION 3			[28]
No	**Answer**	**Description**	
3.1.1	$\frac{891 \checkmark A}{38\,168 \checkmark A}$ Also accept 0,0233 OR 2,33%	2A $\frac{891}{38\,168}$ NPR (2)	P L2
3.1.2	$\frac{3\,212 \checkmark A}{20\,168 \checkmark A} = \frac{803}{5\,042} = 15{,}9\% \approx 16\%$ ✓S Therefore, the statement is not correct ✓J	2A $\frac{3\,212}{20\,168}$ 1S Simplification NPR 1J Justification according to learner's answer (4)	P L4
3.2.1	Engineering ✓✓RT	2RT Engineering (2)	D L1
3.2.2	$\frac{1\,000}{3\,000 \checkmark A} \times 100$ ✓MA = 33,33% ✓A Also accept 33%, 33,3%, 33,3333…%	1A 3 000 1M Multiply by 100 1A 33,33% NPR AO FULL MARKS (3)	D L2
3.2.3	Mean $= \frac{2\,000 + 7\,000 + 4\,000 + 3\,000 + 4\,000 \checkmark M}{5 \checkmark MA}$ = 20 000 ÷ 5 = 4 000 ✓CA	1M Adding correct values 1MA Divide by 5 1CA 4 000 CA only if 20 000 or 5 is correct AO FULL MARKS (3)	D L2
3.2.4	1 000; 1 000; 4 000; 4 000; 7 000 ✓MA Median = 4 000 ✓A	1MA Arranging values 1A 4 000 AO FULL MARKS (2)	D L2
3.2.5	The most popular study field for female students was Education✓E and the least popular was Law. ✓E The most popular field of study amongst males were Engineering ✓E and the least popular was Education and/or Law ✓E.	2E Explain most and least 2E Explain most and least (4)	D L4
3.3.1	Min = 10; Q1 = 45; Q2 (Median) = 60; Q3 = 80; Max = 95. ✓✓✓RT Also accept 96 for Max. IQR = 80– 45 ✓MA = 35✓CA	1RT Min=10 and Max=95 1RT Q2=60 1RT Q1=45 and Q3=80 1MA Minus 1CA 35 CA only if one value is incorrect (5)	D L3
3.3.2	Number of students = 6 200✓A x 0,5 ✓MA = 3 100 ✓A	1A Using 6 200 1MA multiply by 0,50 1A 3 100 (3)	D L2

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			[28]
QUESTION 4			**[32]**
No	**Answer**	**Description**	
4.1.1	His height is on the 50th percentile ✓RG, this means that he is as tall as or taller than 50% of the boys that are the same age. ✓✓J **OR** He is 50% shorter than boys his age. **OR** 50% of boys his age are shorter than him and 50% are taller than him.	1RG 50th percentile 2J Any reasonable justification (3)	D L4
4.1.2	2 years and 4 months ✓RG = 28 months ✓A✓A	1RG 2 years and 4 months 2A 28 months (3) AO FULL MARKS Also accept 2 years and 3 months = 27 months	D L2
4.1.3	100 cm ✓✓A	2A 100 cm (2)	D L1
4.2.1	Gardasil (HPV) ✓✓RT	2RT Gardasil (HPV) Accept Gardasil (2)	F L1
4.2.2	455✓RT + 518✓RT + 120✓M = R1 093✓CA	1RT 455 1RT 518 1M Adding120 1CA 1 093 CA answer if they used 455 + 518 - Allow 1 error (4)	F L2
4.2.3	$\frac{(1\,043{,}84-932)✓M}{932✓RT} \times 100✓M = 12\%✓CA$ OR $\frac{111{,}84✓M}{932✓RT} \times 100✓M = 12\%✓CA$	1M 1 043,84 – 932 1RT 932 1M x 100 1CA 12% CA only if denominator or numerator is correct (4)	F L2

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4.2.4	1 ÷ 0,042✓M = 23,81✓RO 1£ : R23,81 ✓A	1M 1 ÷ 0,042 1PR Rounding (currency) 1A 1£ : R23,81 (3) AO FULL MARKS	F L2
4.2.5	Cost of 5 boxes = 26 545 x 5✓MA = 132 725✓A ÷ 0,053✓MA = R2 504 245,28✓CA **OR** Cost of 1 box in Rand = 26 545 ÷ 0,053✓MA = R500 849,0566✓A x 5✓MA = R2 504 245,28 for 5 boxes✓CA	1MA x 5 1A 132 725 1MA ÷ 0,053 1CA 2 504 245,28 **OR** 1MA ÷ 0,053 1A 500 849,0566 1MA x5 1CA 2 504 245,28 **NPR** (4)	F L3
4.2.6	455✓RT ÷ 1,096 $(\frac{100}{109,6})$✓MA = R415,15 ≈ R415 ✓RO	1RT 455 1MA ÷ 1,096 1RO 415 (3)	F L2
4.2.7	$\frac{4\checkmark RT}{8\checkmark MA} \times 54\,000\checkmark M = R27\,000\checkmark A$	1RT 4 1MA 4+3+1=8 1M x 54 000 1A 27 000 If all three are calculated correctly full marks (4)	F L2
			[32]

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QUESTION 5			[26]
No	**Answer**	**Description**	
5.1.1	Expenses = 600✓A + 195 x n ✓MA	1A 600 1MA + 195 x n (2)	F L2
5.1.2	Income = 320 x 45 = R14 400✓MA Expenses = 600 + 195 x 45 = R9 375✓MCA Profit✓✓CA because her income is more than expenses ✓J	1MA 14 400 1MCA 9 375 CA from 5.1.1 2CA Profit 1J Any relevant justification (5)	F L4
5.1.3	14 400 x 14,7% = R2 116,80 July income = 14 400 + 2 116,80 ✓MA = R16 516,80 ✓A **OR** 14 400 x 114,7% $\left(\frac{114,7}{100}\right)$ ✓MA = R16 516,80✓A **OR** 14 400 x 0,147 = R2 166,80 July income = 14 400 + 2 166,80✓MA = R16 516,80✓A **OR** 14 400 x 1,147✓MA = R16 516,80✓A	1MA x14,7% + 2116,80 1A R16 516,80 **OR** 1MA x114,7% 1A R16 516,80 **OR** 1MA x0,174 +2116,80 1A R16 516,80 **OR** 1MA x1,147 1A R16 516,80 (2)	F L2
5.1.4	The break-even point is the level of sales at which total revenues equal total costs✓✓E. Understanding and effectively using break-even point analysis can help Jane with determining the correct selling price of her products/how many sets of nails she must do to ensure that she makes a profit. ✓✓J	2E Explain break-even concept 2J Justify why this is valuable Accept any relevant justification Where there is no profit or loss / Income = Expenses *Context* (4)	F L4

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5.2.1	A ~~IIII~~ I ✓A B 9 ✓A C 25 ✓CA	1A ~~IIII~~ I 1A 9 1CA 25 (3)	D L1
5.2.2	Pink ✓A✓A	2A (2)	D L1
5.2.3	Categorical✓✓A, the data is discriptive. ✓✓J	2A Categorical 2J Any relevant justification (4)	D L4
5.2.4	Price in July = 416,84 x 1,014 ✓M = R422,68✓A Price in August = 422,68 x 1,012 ✓MA = R427,75✓CA **OR** Price in July = 416,84 x 1,4% = R5,84 + 416,84 ✓M = R422,68✓A Price in August =422,68 x 1,2% ✓MA = 5,07 + 422,68 =R427,75✓CA	1M x 1,014 OR $\left(\frac{101,4}{100}\right)$ 1A 422,68 1MA 422,68 x 1,012 OR $\left(\frac{101,2}{100}\right)$ 1CA R427,75 **OR** 1M x 1,4% + 416,84 1A 422,68 1MA 422,68 x 1,2% + 422,68 1CA R427,75 (4)	F L3
			[26]
			GRAND TOTAL: [150]

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