KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL
SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY

COMMON TEST

MARKING GUIDELINE

APRIL 2021

MARKS: 100

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/ diagram/Map
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example/Explanation
J	Justification
R	Rounding off
F	deriving a formula
AO	Answer only full marks
P	Penalty e.g. for units, incorrect rounding off etc.
NPR	No penalty for rounding / units

This marking guideline consists of 6 pages.

QUESTION 1 [20 MARKS]

No.	Solution	Explanation	T&L
1.1.1	Numerical✓✓A	2A correct answer (2)	D L1
1.1.2	379; 392; 396; 404; 437; 519; 560; 569; 904; 1 493; 3 688✓✓A	2A ascending order (2)	D L1
1.1.3	11 districts✓✓RT	2RT number of districts (2)	D L1
1.1.4	eThekwini✓ RT with 156 259 confirmed cases✓RT	1RT correct district 1RT correct number of cases (2)	D L1
1.1.5	6 531✓✓RT	2RT correct number (2)	D L1
1.2.1	Time in months $= 20 \times 12$✓M $= 240$✓A	1M multiplying by 12 1A correct answer (2) **AO**	M L1
1.2.2	Real Cost of Loan $= 240 \times R7\ 050$✓MCA $= R1\ 692\ 000$✓A	**CA from Q1.2.1** 1MCA multiplying by 240 1A correct answer (2) **AO**	F L1
1.2.3	Total interest $= R1\ 692\ 000 - R730\ 554$✓MCA $= R961\ 446$✓CA	**CA from 1.2.2** 1MCA for subtracting CA answer (2) **AO**	F L1
1.2.4	Monthly interest $= R961\ 446 \div 240$✓MCA $= R4\ 006,03$✓CA	**CA from 1.2.3** 1MCA dividing by 240 1CA correct answer (2) **AO**	F L1
1.2.5	Part of monthly repayment $= R7\ 050 - R4\ 006,03$✓MCA $= R3\ 043,97$✓CA	**CA from 1.2.4** 1MCA subtracting 1CA correct answer (2) **AO**	F L1
			[20]

QUESTION 2 [30 MARKS]		
2.1.1	A = 247 613 − 246 701✓MA = 912kWh✓CA	1MA subtracting correct values 1CA answer **AO** (2) M L1
2.1.2	B = 912 × 182,09c✓MCA = 166 066,08c✓S = R1 660,66✓C OR B=912 ×1,8209✓✓ MCA =R1 660,66✓CA	**CA from 2.1.1** 1MCA multiplying 1S simplification 1C converting to rand OR 1MCA multiplying 1C conversion CA answer (3) F L2
2.1.3	C = R1 660,66 − (R2,81 + R249,10)✓MCA = R1 906,95✓CA	**CA from 2.1.2** 1MCA subtracting 1CA answer (2) F L1
2.2.1	Total fixed cost = (2 × R5 500) + R8 200✓MA = R19 200✓A	1MA for multiplying 5 500 by 2 1A answer **AO** (2) F L1
2.2.2		3A 1 tick for correct pairs values (3) F L2

2.2.2

Total No. of Haircuts	250	300	350	400	450	500
Total Cost (R)	19200	19200	19200	19200	19200	19200
Total Income (R)	12500	✓A 15000	17250	✓A 20000	22500	✓A 25000

2.2.3		

TOTAL COST/INCOME – ERIC'S BARBERSHOP

2A for the correct line
1A for correct position for P

(3) F L3

2.2.4	Total income $= 40 \times 50 \times 20$✓MA $\qquad\qquad = $ R40 000✓CA Total expenses $=$ R19 200 Profit $=$ R40 000 $-$ R19 200✓MA $\qquad\quad = $ R20 800✓CA Mr Eric's claim is VALID✓O	1MA multiplying by 20 1CA answer 1MA subtracting 1CA answer 1O opinion (5)	F L4
2.3.1	Total Expenditure $= \frac{\text{R1 929 234}}{\text{R5 040 322}}$✓MA $\times 100\%$✓MA $\qquad\qquad = 38{,}28\%$✓A	1MA dividing 1MA multiplying 1A correct answer (3)	F L2
2.3.2	75% of R3 055 713 $=$ R2 291 784,75✓MA January export earnings $=$ R3 055 713 $-$ R2 291 784,75 $\qquad\qquad\qquad\qquad = $ R763 928,25✓A 47% of R1 984 609 $=$ R932 766,23✓M Local earnings $=$ R1 984 609 $-$ R932 766,23 $\qquad\qquad = $ R1 051 842,77✓A Total income for January $=$ R1 051 842,77 $+$ R763 928,25 $\qquad\qquad\qquad\qquad = $ R1 815 771,02✓A Loss for January $=$ R1 815 771,02 $-$ R1 929 234✓M $\qquad\qquad\qquad = $ R113 462,98✓CA **OR** January export earnings $= 0{,}25 \times$ R3 055 713✓MA $\qquad\qquad\qquad\qquad = $ R763 928,25✓A Local earnings $= 0{,}53 \times$ R1 984 609✓MA $\qquad\qquad = $ R1 051 842,77✓A Total income for January $=$ R1 051 842,77 $+$ R763 928,25 $\qquad\qquad\qquad\qquad = $ R1 815 771,02✓A Loss for January $=$ R1 815 771,02 $-$ R1 929 234✓M $\qquad\qquad\qquad = $ R113 462,98✓CA	1MA multiplying by 75% 1A answer 1M multiplying by 47% 1A answer 1A addition and answer 1M subtracting 1CA answer 1MA multiplying by 25% 1A answer 1MA multiplying by 53% 1A answer 1A addition and answer 1M subtracting 1CA answer (7)	F L3
			[30]

QUESTION 3 [25 MARKS]

Q	Solution	Explanation	T &L
3.1.1	Tax Bracket 3 ✓✓RT	2RT correct bracket (2)	F L1
3.1.2	Primary Tax Rebate R14 958✓RT Medical aid credit per month R638✓RT	1RT correct value 1RT correct value (2)	F L1
3.1.3	✓A Monthly tax = R67 144 + 0,31(R425 648 – R321 600) ✓SF = R99 398,88✓CA = R99 398,88 – (R14 958) ✓MCA = R84 440,88✓CA = R84 440,88– (R7 656) ✓MCA = R76 784,88 = R76 784,88 ÷ 12 ✓MA = R6398,74 ✓CA	1A correct tax bracket 1SF annual taxable income 1CA simplification 1MCA subtracting rebate 1CA simplification 1MCA subtracting medical credit for the year 1MA dividing by 12 1CA answer (8)	F L3
3.2.1	✓MA Difference in mileage = (200 × 3) – 500 ✓RT = 100 km✓A	1MA multiplying by 3 1RT subtracting correct values 1A correct answer (3)	F L2
3.2.2	Cost per day for Option 1 = R1254,64 ÷ 3 ✓MA = R418,21✓A	1MA dividing by 3 days 1A answer (2)	F L2
3.2.3	Cost per km for Renault Kwid = R408,25 ÷ 200✓MA = R2,04 per km✓A	1MA dividing by 200 1A answer (2)	F L2
3.2.4	Cost per km for Polo = R1254,64 ÷ 500 ✓MA = R2.51✓A % = $\dfrac{2,04}{2,51} \times 100$ ✓MCA = 81,27 Statement is CORRECT✓O	1MA dividing by 500 1A correct answer 1MCA dividing by 2,51 1O opinion (4)	F L4
3.2.5	Customer review of 8.8 that is excellent. ✓✓O Any valid reason	2O opinion (2)	F L4
			[25]

QUESTION 4 [25 MARKS]

4.1.1	Continuous✓A Measured value✓A (2)	1A correct answer 1A correct answer	DH L1

4.1.2	Average obesity rate
	    ✓MA
	$= (74,60+74,40+61+55,90+55,30+52,90+51,60+50+48,20+47,30)$
	$\div 10$✓MA
	$= 57,12\%$✓CA
	
	(3)
		1MA adding correct
		       values
		
		1MA dividing by 10
		1CA answer
			DH
			L2

4.1.3	Median BMI $=29,2; 29,3; 29,4; 31,7; 31,9; 32,5; 33; 34,9$✓A $=(31,7+31,9) \div 2$✓MA $=31,8$✓CA (3)	1A arranging in order 1MA dividing by 2 1CA answer	DH L2
4.1.4	Population of Samoa : A=303 152 - (55100+1373+10876+17565+18169+59610+11931+ 1619+106760)✓MA =303 152 –283 003✓M = 20149✓CA (3)	1MA adding correct values 1M subtracting 1CA answer	DH L3
4.1.5	Unhealthy lifestyle✓O Lack of exercise✓O Any valid reason	2O opinion (2)	DH L4
4.2.1	Q2 = 25✓✓RG (2)	2RG reading correct value **Accept from 24 to 25**	DH L2
4.2.2	$25 = \dfrac{\text{weight in kilograms}}{(1,7)^2}$ ✓SF 25×1.7^2 = weight in kg✓S Weight in kg=72,25kg✓CA (3)	**CA from 4.2.1** 1SF substitution 1S simplification 1CA answer	DH L3

4.2.3	Men's IQR = 26 – 21 ✓RG
	           = 5 ✓CA
	
	Women's IQR = 25 –20 ✓RG
	        = 5
	Difference = 5-5
	      = 0✓CA
	
	Statement is INCORRECT. ✓O
		1RG subtracting
		1CA answer
		
		1RG subtracting
		
		1CA answer
		
		1O opinion
		Accept a leeway of 1 (5)
			DH
			L4

4.2.4	Different levels of development✓✓O Any valid reason	2O opinion (2)	DH L4
			[25]

TOTAL: 100