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**KWAZULU-NATAL PROVINCE**

**EDUCATION**  
REPUBLIC OF SOUTH AFRICA

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**MATHEMATICAL LITERACY**

**COMMON TEST**

**MARKING GUIDELINE**

**APRIL 2021**

**MARKS: 100**

<b>SYMBOL</b>	<b>EXPLANATION</b>
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.**

<b>QUESTION 1 [20 MARKS]</b>			
<b>No.</b>	<b>Solution</b>	<b>Explanation</b>	<b>T&amp;L</b>
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)	M L1
1.2.2	Real Cost of Loan = $240 \times R7\ 050$ ✓MCA = R1 692 000✓A	<b>CA from Q1.2.1</b> 1MCA multiplying by 240 1A correct answer (2)	F L1
1.2.3	Total interest = $R1\ 692\ 000 - R730\ 554$ ✓MCA = R961 446✓CA	<b>CA from 1.2.2</b> 1MCA for subtracting CA answer (2)	F L1
1.2.4	Monthly interest = $R961\ 446 \div 240$ ✓MCA = R4 006,03✓CA	<b>CA from 1.2.3</b> 1MCA dividing by 240 1CA correct answer (2)	F L1
1.2.5	Part of monthly repayment = $R7\ 050 - R4\ 006,03$ ✓MCA = R3 043,97✓CA	<b>CA from 1.2.4</b> 1MCA subtracting 1CA correct answer (2)	F L1
			<b>[20]</b>

<b>QUESTION 2 [30 MARKS]</b>																								
2.1.1	$A = 247\,613 - 246\,701 \checkmark \text{MA}$ $= 912kWh \checkmark \text{CA}$	1MA subtracting correct values 1CA answer <b>AO</b> (2)	M L1																					
2.1.2	$B = 912 \times 182,09c \checkmark \text{MCA}$ $= 166\,066,08c \checkmark \text{S}$ $= R1\,660,66 \checkmark \text{C}$ OR $B = 912 \times 1,8209 \checkmark \checkmark \text{MCA}$ $= R1\,660,66 \checkmark \text{CA}$	<b>CA from 2.1.1</b> 1MCA multiplying 1S simplification 1C converting to rand  OR 1MCA multiplying 1C conversion CA answer (3)	F L2																					
2.1.3	$C = R1\,660,66 - (R2,81 + R249,10) \checkmark \text{MCA}$ $= R1\,906,95 \checkmark \text{CA}$	<b>CA from 2.1.2</b> 1MCA subtracting 1CA answer (2)	F L1																					
2.2.1	$\text{Total fixed cost} = (2 \times R5\,500) + R8\,200 \checkmark \text{MA}$ $= R19\,200 \checkmark \text{A}$	1MA for multiplying 5 500 by 2 1A answer <b>AO</b> (2)	F L1																					
2.2.2	<table border="1"> <thead> <tr> <th>Total No. of Haircuts</th> <th>250</th> <th>300</th> <th>350</th> <th>400</th> <th>450</th> <th>500</th> </tr> </thead> <tbody> <tr> <th>Total Cost (R)</th> <td>19200</td> <td>19200</td> <td>19200</td> <td>19200</td> <td>19200</td> <td>19200</td> </tr> <tr> <th>Total Income (R)</th> <td>12500</td> <td><math>\checkmark \text{A}</math> 15000</td> <td>17250</td> <td><math>\checkmark \text{A}</math> 20000</td> <td>22500</td> <td><math>\checkmark \text{A}</math> 25000</td> </tr> </tbody> </table>	Total No. of Haircuts	250	300	350	400	450	500	Total Cost (R)	19200	19200	19200	19200	19200	19200	Total Income (R)	12500	$\checkmark \text{A}$ 15000	17250	$\checkmark \text{A}$ 20000	22500	$\checkmark \text{A}$ 25000	3A 1 tick for correct pairs values (3)	F L2
Total No. of Haircuts	250	300	350	400	450	500																		
Total Cost (R)	19200	19200	19200	19200	19200	19200																		
Total Income (R)	12500	$\checkmark \text{A}$ 15000	17250	$\checkmark \text{A}$ 20000	22500	$\checkmark \text{A}$ 25000																		
2.2.3	<p style="text-align: center;"><b>TOTAL COST/INCOME – ERIC'S BARBERSHOP</b></p>	2A for the correct line 1A for correct position for P  (3)	F L3																					

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

<b>QUESTION 3 [25 MARKS]</b>			
<b>Q</b>	<b>Solution</b>	<b>Explanation</b>	<b>T &amp; L</b>
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	$\begin{aligned} & \checkmark A \\ \text{Monthly tax} &= R67\,144 + 0,31(R425\,648 - R321\,600) \checkmark SF \\ &= R99\,398,88 \checkmark CA \\ &= R99\,398,88 - (R14\,958) \checkmark MCA \\ &= R84\,440,88 \checkmark CA \\ &= R84\,440,88 - (R7\,656) \checkmark MCA \\ &= R76\,784,88 \\ &= R76\,784,88 \div 12 \checkmark MA \\ &= R6398,74 \checkmark CA \end{aligned}$	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	$\begin{aligned} & \checkmark MA \\ \text{Difference in mileage} &= (200 \times 3) - 500 \checkmark RT \\ &= 100 \text{ km} \checkmark A \end{aligned}$	1MA multiplying by 3 1RT subtracting correct values 1A correct answer (3)	F L2
3.2.2	$\begin{aligned} \text{Cost per day for Option 1} &= R1254,64 \div 3 \checkmark MA \\ &= R418,21 \checkmark A \end{aligned}$	1MA dividing by 3 days 1A answer (2)	F L2
3.2.3	$\begin{aligned} \text{Cost per km for Renault Kwid} &= R408,25 \div 200 \checkmark MA \\ &= R2,04 \text{ per km} \checkmark A \end{aligned}$	1MA dividing by 200 1A answer (2)	F L2
3.2.4	$\begin{aligned} \text{Cost per km for Polo} &= R1254,64 \div 500 \checkmark MA \\ &= R2,51 \checkmark A \\ \\ \% &= \frac{2,04}{2,51} \times 100 \checkmark MCA \\ &= 81,27 \\ \\ \text{Statement is CORRECT} \checkmark O \end{aligned}$	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
			<b>[25]</b>

<b>QUESTION 4 [25 MARKS]</b>			
4.1.1	Continuous ✓ A Measured value ✓ A	1A correct answer 1A correct answer (2)	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) ÷ 10 ✓ MA = 57,12% ✓ CA	1MA adding correct values  1MA dividing by 10 1CA answer (3)	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) ÷ 2 ✓ MA  =31,8 ✓ CA	1A arranging in order  1MA dividing by 2 1CA answer (3)	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	1MA adding correct values 1M subtracting 1CA answer (3)	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	2RG reading correct value <b>Accept from 24 to 25</b> (2)	DH L2
4.2.2	$25 = \frac{\text{weight in kilograms}}{(1,7)^2}$ ✓ SF  $25 \times 1,7^2 = \text{weight in kg}$ ✓ S  Weight in kg = 72,25 kg ✓ CA	<b>CA from 4.2.1</b> 1SF substitution  1S simplification  1CA answer (3)	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 <b>Accept a leeway of 1</b> (5)	DH L4
4.2.4	Different levels of development ✓ ✓ O Any valid reason	2O opinion (2)	DH L4
			<b>[25]</b>

**TOTAL: 100**