NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2021

MATHEMATICAL LITERACY: PAPER I

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.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

Q	ANSWER	SKILLS ASSESSED	MARK
QUESTION 1			
1.1.1	$22 000 000	• 22 000 000	
1.1.2	1 600 000 000 ÷ 1 000 × $2 = $3 200 000 OR 1,6 billion ÷ 1 000 × $2 = $0,003 2 billion	• Division by 1 000 • Multiplication by $2 • $3 200 000	
1.1.3 (a)	$2 × 1,9% = $0,038 $2 + $0,038 = $2,04 OR $2 × 1,019 = $2,04 OR $2 × 101,9% = $2,04	• 1,9% of $2 • Adding 1,9% • $2,04	
1.1.3 (b)	$2,04 × R14,38 = R29,34 (rounding penalty)	• Multiplication • R29,34	
1.1.4	R29,34 – R27,46 = R1,88	• Subtraction • R1,88	
1.1.5	R204 million ÷ $15 million $1 : R13,60 OR R1 : $0,07	• Division by $15 million • R13,60	
1.2.1	$45 + 3 × $15 = $45 + $45 = $90	• Addition of 3 times $15 • $90	
1.2.2	$15 ÷ 3 = $5	• Division by 3 • $5	
1.2.3 (a)	149 × 3 = R447 for 3 GB of data in SA	• Multiply by 3 to get price for 3 GB • R447	
1.2.3 (b)	R205,95 ÷ 3 = R68,95	• Divide by 3 • R68,95	

1.2.3 (c)	\$5 = R68,65 68,65 ÷ 5 = R13,73 \$1 = R13,73	• Divide by 5 • \$1 = R13,73	
1.2.3 (d)	$\frac{14,48-13,73}{13,73} \times 100$ = 5,46%	• Subtraction • Divisor of 13,73 • 5,46%	
1.3.1	\$31 250 × 12 = \$375 000	• Multiplication by 12 for annual income • \$375 000	
1.3.2	0,35 × 375 000 = \$131 250	• 35% • Calculating 35% of \$375 000 • \$131 250	
QUESTION 2			
2.1.1	N3	• N3	
2.1.2	North East	• NE	
2.1.3	12,3 cm	• 12,3 cm	
2.1.4 (a)	0,85 km	• 0,85 km	
2.1.4 (b)	12,3 cm ÷ 1,5 × 0,85 km = 6,97 km	• ÷ 1,5 × 0,85 km • 6,97 km	
2.1.5	S = 8,7 km ÷ 5 minutes $S = 8,7 \text{ km} \div \frac{5}{60}$ S = 8,7 km/h ÷ 0,83 hr S = 104,4 km/h	• Distance ÷ time • Conversion to hours • 104,4 km/h	
2.2.1	Masabalala Yengwa Ave Isaiah Ntshangase Road OR Umgeni Road Isaiah Ntshangase Road	• Correct street names	
2.2.2	56 000 ÷ 4 = 14 000 seats	• Division by 4 • 14 000 seats	
2.2.3	7 500 ÷ 56 000 × 100 = 13,39 %	• 7 500 • 13,39% OR 13,4% OR 13%	

QUESTION 3			
3.1.1	75 ÷ 10 = 7,5 cm	• 7,5 cm	
3.1.2	4,7 ÷ 2 = 2,35 cm	• 2,35 cm	
3.1.3	V = 3,142 × 2,35² × 7,5 V = 130 cm³	• Substitution • 130 cm³	
3.1.4	48,19 g ÷ 1,7 oz = 28,35 g	• Calculating g/oz • 28,35 g	
3.1.5 (a)	15 g ÷ 5 = 3 g/sweet	• Division by 5 • 3 g/sweet	
3.1.5 (b)	$\frac{11}{15} \times 100$ = 73,33%	• Accuracy for values in fraction • Multiplication by 100 • 73,33%	
3.1.5 (c)	11 ÷ 5 × 16 = 35,2 g of sugar	• Division by 5 • Multiplication by 16 • 35,2 g	
3.2.1	15 cm – 2 cm = 13 cm	• Subtraction of 2 × 1 cm on either side • 13 cm	
3.2.2	$\frac{2}{5} \times 15$ cm = 6 cm	• Multiplying by $\frac{2}{5}$ • 6 cm	
3.2.3	A = 15 × 6 A = 90 cm²	• L × B • 90 cm² • unit	
QUESTION 4			
4.1.1	(2 823 – 1 851) ÷ 27 = 36 emojis	• Difference in number of Emojis designed • 27 months • 36	
4.1.2	0,92 × 3 424 971 237 = 3 150 973 538	• Calculating a percentage of an amount • 3 150 973 538	
4.2	$\frac{5}{9}$	• $\frac{5}{9}$	
4.3.1	$\frac{6}{225}$	• $\frac{6}{225}$	
4.3.2	$\frac{34}{224} + \frac{5}{224}$ $= \frac{39}{224}$	• Method – adding • 224	
4.4.1	English US	English US	
4.4.2	Heart	Heart	

4.4.3	57 ÷ 5 = 11,4%	• Sum of all percentages • Division by 5 languages • 11,4%	
4.4.4	11,4% × 4 = 45,6% More than 4 times other languages average True French use hearts more than 4 times the average use of other languages at 58% OR 58% ÷ 4 = 14,5 which is greater than 11,4 so TRUE.	• Multiplying by 4 • 45,6% • True	
4.5.1	256 785 982 – 14 762 001 = 242 023 981	• Values correct • 242 023 981	
4.5.2	(25 536 000 + 24 775 974) ÷ 2 = 50 311 974 ÷ 2 = 25 155 987	• Sum of middle 2 terms • Divide by 2 • 25 155 987	
4.5.3	257 000 000; 131 000 000; 96 000 000; 70 000 000; 31 000 000; 28 000 000; 26 000 000; 25 000 000; 24 000 000; 21 000 000; 19 000 000; 17 000 000; 17 000 000; 15 000 000 17 000 000	• Rounding to the nearest million • 17 000 000	
QUESTION 5			
5.1	T = 9 080 ÷ 825,45 T = 11hrs	• Distance divided by speed • 11 hrs	
5.2	3 479 ÷ 5 585 = 0,6229 miles/km	• Miles divided by kilometres • 0,6229	
5.3.1	January	January	
5.3.2	£325	£325	
5.3.3	325 – 827 = –502 – 502 ÷ 827 × 100 = –60,7% OR 827 – 325 = 502 502 ÷ 827 × 100 = 60,7%	• Difference between new and old • Division by old multiply by 100 • –60,7%	

<table>
<tr><td>5.4.1</td><td>1 hr 20 min</td><td>1 hr 20 min</td><td></td></tr>
<tr><td>5.4.2</td><td>09:34 + 1 hr 20 min + 5 min
= 10:59</td><td>• Adding 1hr 20 min
• 10:59</td><td></td></tr>
<tr><td>5.4.3</td><td>$52 ÷ 20
= $2,60</td><td>• Cost divided by 20
• $2,60</td><td></td></tr>
<tr><td>5.4.4</td><td>30 min = $\frac{1}{2}$</td><td>30 min = $\frac{1}{2}$</td><td></td></tr>
<tr><td>5.4.5</td><td>4,7 m = 470 cm

470 cm ÷ 63
= 7,46 cm</td><td>• Conversion to cm
• Division by 63
• 7,46 cm</td><td></td></tr>
<tr><td>5.4.6 (a)</td><td>Los Angeles</td><td>Los Angeles</td><td></td></tr>
<tr><td>5.4.6 (b)</td><td>75 ÷ 5
= 5 hours</td><td>• Ratio
• 5 hrs</td><td></td></tr>
<tr><td>5.5.1</td><td>2:00 pm + 1 hr 40 min
= 3:40 pm

07:00 – 1 hr
= 6:00 pm

6:00 pm – 3:40 pm
= 2hrs 20 min to clean</td><td>• Sum of show time
• 3:40 pm
• 1 hour before show time: 6:00 pm
• Subtraction of times
• 2 hrs 20 min</td><td></td></tr>
<tr><td>5.5.2</td><td>Mondays</td><td>Mondays</td><td></td></tr>
<tr><td>5.5.3</td><td>22 shows</td><td>22</td><td></td></tr>
<tr><td>5.5.4</td><td>$15 million + $57 000 × 22
= $16 254 000</td><td>• Addition
• 57 000 × 22
• 16 254 000</td><td></td></tr>
<tr><td>5.5.5</td><td><table><tr><td>$139</td><td>580</td><td>$ 80 620</td></tr><tr><td>$175</td><td>540</td><td>$ 94 500</td></tr><tr><td>$327</td><td>500</td><td>$163 620</td></tr><tr><td></td><td></td><td>$338 620</td></tr></table></td><td>Cost multiply to number of seats
• $338 620</td><td></td></tr>
<tr><td>5.5.6</td><td>338 620 × 22
(ca 5.5.3 & 5.5.5)
= $7 449 640</td><td>• Multiply by 22
• $7 449 640</td><td></td></tr>
<tr><td>5.5.7</td><td>16 254 000 ÷ 338 620
(ca 5.5.4 & 5.5.5)

= 48 shows</td><td>• Total expenses divided by total income per show
• 48 shows</td><td></td></tr>
</table>

Total: 150 Marks