NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2020

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.

IEB Copyright © 2020

Q	Marking guideline	Skill assessed	Topic	Level
KEY	**a** accuracy **m** method **cam** continued accuracy method	**ca** continued accuracy **ma** method accuracy **r** rounding	**F** Finance **M** Measurement **MP** Maps/Plans **D** Data Handling **P** Probability	**1** KN **2** RP **3** CP
1.1.1	R180 ✓a✓a	✓ × 2 R180	F	1
1.1.2	R180 ÷ 14 ✓ma = R12,857 = R12,86 ✓car	✓ Divide by 14 ✓ R12,86 to 2 dec places	F	1
1.1.3	First Day: R180 ✓a Remaining 48 hrs ÷ 12 = 4 ✓a 4 × R90 = R360 ✓ma R180 + R360 = R540 ✓ca	✓ R180 ✓ 4 ✓ R360 ✓ R540	F	1
1.1.4.(a)	R160 ✓a✓a	✓ ×2 R160	F	2
1.1.4 (b)(i)	R900 ✓a – R400 ✓ma = R500 ✓ca	✓ R900 read off graph ✓ Subtraction of 400 ✓ R500	F	2
1.1.4 (b)(ii)	$\frac{500\ \checkmark^a}{900\ \checkmark^a} \times 100 = 55{,}56\%\ \checkmark^a$ OR 100% – ✓a 44,44% ✓a = 55,56% ✓a	✓ Numerator ✓ Denominator ✓ 44%	F	3
1.2.1	Mugg & Bean ✓a✓a	✓ ×2 Mugg & Bean	F	1
1.2.2	October ✓a✓a OR 10th month	✓ ×2 October	F	1

IEB Copyright © 2020

1.2.3	A. R77,80 ÷ ✓^{m} 1,15 ✓^{ma} = R67,65 ✓^{a} OR R77,80 × $\frac{100}{115}$ ✓^{ma} ✓^{m} = R67,65 ✓^{a} B. R77,80 – R67,65 ✓^{mca} = R10,15 ✓^{ca} OR $\frac{15}{115}$ ✓^{mca} × R77,80 = R10,15 ✓^{ca}	✓ Division ✓ by 1,15 ✓ R67,65 ✓ Subtraction from total ✓ R10,15	F	2 1
1.2.4	44,90 + 0,052 ✓^{a} × 44,90 = R47,2348 47,2348 + 0,052 × 47,2348 ✓^{ma} = R49,69 ✓^{a} OR R44,90 × 105,2% = R47,23 ✓^{a} R47,23 × 105,2% = R49,69 ✓^{m}✓^{a}	✓ 5,2% ✓ Squared ✓ R49,69 OR ✓ 5,2% ✓ 5,2% of R47,2348 ✓ R49,69	F	2
1.3.1	R11 704 ✓^{a} × 2 = R23 408 ✓^{a}	✓ Correct value of R11 704 ✓ R23 408	F	1
1.3.2	€1 449,41 : R23 408 R23 408 ÷ 1 449,41 ✓^{mca} = R16,15 ✓^{a} € 1 = R16,15 ✓^{a}	✓ R23 408 divided by 1 449,41 ✓ R16,15 ✓ In ratio form	F	2
1.3.3	19,7231 – 18,9599 ✓^{ma} = R0,7632 ✓^{a} OR R0,76	✓ Subtractions ✓ R0,7632	F	1
				[35]

IEB Copyright © 2020

2.1.1	$°C = \frac{5}{9}(2000 \checkmark^{a} - 32) \checkmark^{a}$ $°C = 1093{,}33 \checkmark^{a}$	✓ Correct selection of formula ✓ Substitution of 2 000 ✓ 1 093,33 °C	M	1
2.1.2 (a)	5 min × 2 sides ✓a = 10 minutes ✓a	✓ Multiply by 2 ✓ 10 minutes	M	1
2.1.2 (b)	14:07 ✓a✓a	✓ 14 ✓ 07	M	1
2.2.1	0,5 × 220 g ✓a = 110 g ✓a OR 220 g ÷ 2 ✓a = 110 g ✓a	✓ Half of 220 g ✓ 110 g	M	1
2.2.2	7,75 ounces : 220 g 220 g ÷ 7,75 ✓ma = 28,39 g/ounce ✓a	✓ Divide by 7,75 ✓ 28,39 g/ounce	M	2
2.2.3	$\frac{1}{2}$ tot : 1 tsp ✓a 12,5 g : 4,2 g ✓a 125 : 42 ✓m✓ca	✓ Ratio tot to teaspoon ✓ Ratio in grams ✓ Multiply by 10 ✓ Simplified to 125 : 42	M	1
2.3.1	11,81 × 2,54 ✓ma = 29,9974 cm ✓a = 30 cm ✓r	✓ Multiplication by 2,54 ✓ 29,9974 ✓ 30 cm	M	1
2.3.2	30 ÷ 1,5 ✓a = 20 ✓a slices including crusts	✓ Division by 1,5 ✓ 20 slices	M	1
2.3.3	20 – 2 = 18 ✓a slices excluding crusts 18 ÷ 2 ✓ma = 9 ✓ca toasted sandwiches	✓ 18 slices, excluding the crusts ✓ Division by 2 ✓ 9 toasted sandwiches	M	2

IEB Copyright © 2020

2.3.4	Along the width: 33 ÷ 11 = 3 ✓ma Along the Length 44 ÷ 11 = 4 ✓ma 3 × 4 ✓ma = 12 sandwiches ✓ca	✓ 3 ✓ 4 ✓ Multiplication ✓ 12	M	2
				[27]

3.1.1	B3 ✓a✓a	✓ ×2 B3	MP	1
3.1.2	8 mm : 200 m ✓a 21 mm ÷ 8 × 200 ✓ma = 525 m ✓ca A = 525 × 525 ✓m = 275 625 m² ✓ca OR 24 mm : 600 m ✓a 21 mm ÷ 8 × 600 ✓ma = 525 m ✓ca A = 525 × 525 ✓m = 275 625 m² ✓ca	✓ Bar measurement ✓ Pirate method ✓ 525 m ✓ calculating area of a square ✓ 275 625 m²	MP	3
3.1.3	Robber's Grave ✓a✓a	✓ ×2 Robber's Grave	MP	1
3.2	1 721 ÷ 25,4 ✓ma = 67,7559 = 68 people/km² ✓ra	✓ Divide by 25,4 km² ✓ 68 people/km² Accept 67 as an answer	MP	1
3.3.1	Kruger National Park ✓a Blyde River Canyon Nature Reserve ✓a	✓ Kruger National Park ✓ Blyde River Canyon Nature Reserve	MP	1

IEB Copyright © 2020

3.3.2	South West ✓a✓a	✓ ×2 South West	MP	1
3.3.3	Mozambique ✓a Swaziland ✓a	✓ Mozambique ✓ Swaziland	MP	1
3.3.4	N4 ✓a✓a	✓ ×2 N4	MP	1
3.3.5	3,6 cm : 108 km 3,6 : 10 800 000 cm ✓a (÷3,6) ✓ma 1 : 3 000 000 ✓ca	✓ Converting 108 km to cm ✓ Simplification of scale ✓ 1 : 3 000 000	MP	2
3.3.6	T = 108 ÷ 81 ✓a(formula) ✓ma(subs) = 1,333… = 1 hour 20 min ✓a 2 pm + 1hr 20 minutes ✓ma = 3:20 pm ✓ca	✓ Formula ✓ Substitution ✓ Converted to hours and minutes ✓ Addition ✓ 3:20 pm	MP	3
				[27]

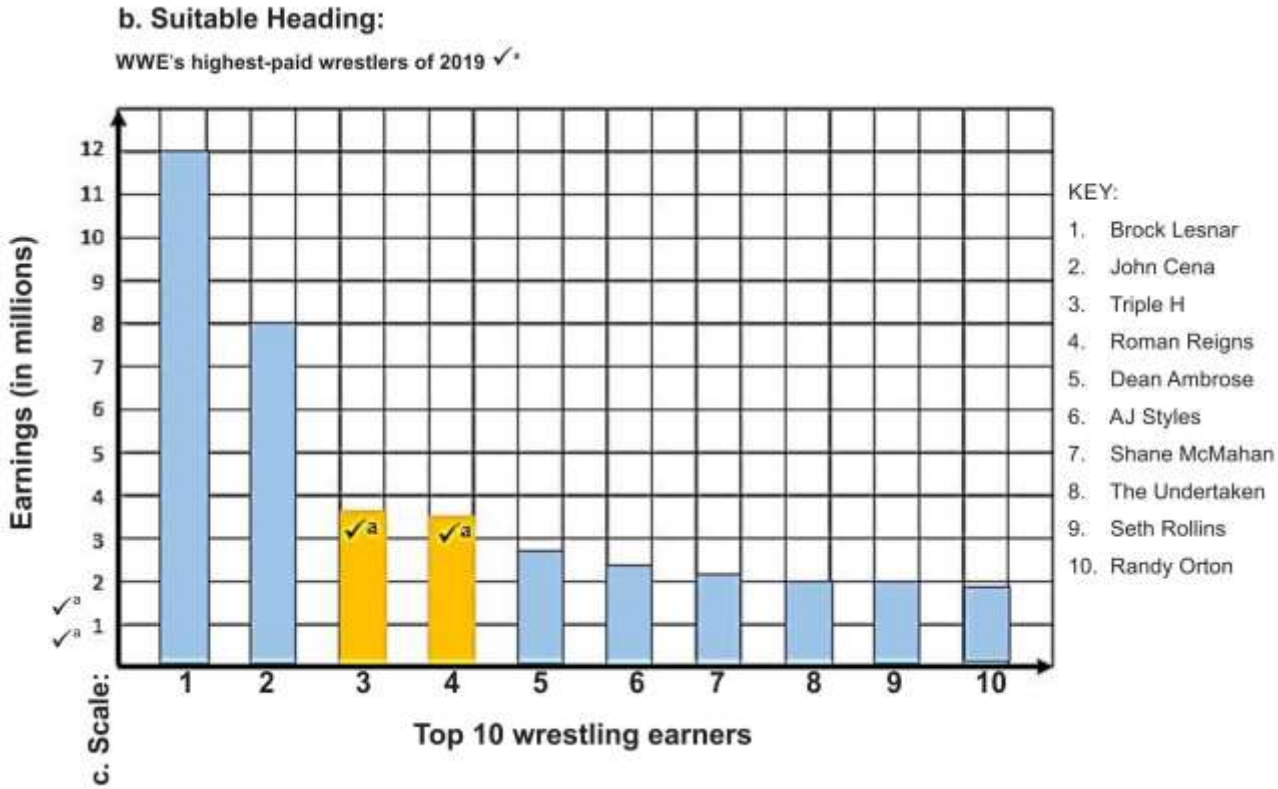
4.1.1	Pictogram ✓a✓a or Pictograph	✓ ×2 Pictogram	D	1
4.1.2	$1 million OR $1 000 000 ✓a✓a	✓ ×2 $1 000 000	D	1
4.1.3	$10 mil – $2 mil ✓ma = $8 mil ✓a OR $8 000 000	✓ Subtraction of $2 million ✓ $8 mil	D	1
4.1.4	Average = $\frac{39,8\text{mil}}{10\ ✓^{ma}}$ ✓a = $3,98 million ✓ma = $3 980 000 ✓ca	✓ Sum of all earning ✓ 10 earners ✓ $3,98 million ✓ $3 980 000	D	2
4.1.5	$Q_2 = \frac{3,2\text{ mil} + 2,9\text{ mil}}{2\ ✓^{ma}}$ ✓a =$3,05 million ✓ca OR $3 050 000	✓ sum of correct values ✓ dividing by 2 ✓ $3,05 million	D	2
4.1.6 (a)	(i) $4,3 million ✓a✓a (ii) $4,3 million – $2,5 million ✓a = $1,8 million ✓a (iii) 5 ✓a✓a	✓ ×2 $4,3 million ✓ Subtraction of upper & lower quartiles ✓ 1,8 million ✓ ×2 5	D	1 1 1

IEB Copyright © 2020

4.1.6 (b)	☐ The data is skewed to the left. ✓ The upper quartile represents the top 25% wrestling earners. ✓ The difference in earning for the top quartile is larger than lower quartile.		D	1
4.2.1	\$12 000 000 ✓^{a}✓^{a} OR \$12 million	✓ ×2 \$12 000 000	D	1
4.2.2	\$2 000 000 ✓^{a}✓^{a} OR \$2 million	✓ ×2 \$2 000 000	D	1
4.2.3 (a)	$\frac{12}{40,5}$ ✓^{a} × 100% ✓^{m} = 29,6% ✓^{ca}	✓ Correct numerator and denominator ✓ Multiply with 100 ✓ 29,6%	D	2
4.2.3 (b)	$\frac{12}{40,5}$ × 360° ✓^{a} = 106,7° ✓^{ca} OR 29,6% × 360 = 106,6° 30% × 360 = 108°	✓ Multiply by 360 ✓ 106,7° Accept 107°	D	2
4.2.4 (a)	Numerical ✓^{a}✓^{a}	✓ ×2 Numerical	D	1

IEB Copyright © 2020

4.2.4 (b–d)	See Below:	D	(b) 1 (c) 2 (d) 1



[37]

5.1	A. $\frac{1}{3}$ ✓a B. Grey ✓a C. Green ✓a $\frac{1}{6} \times 0{,}35 \overset{\checkmark a}{=} 0{,}0583$ ✓a	✓ $\frac{1}{3}$ ✓ Grey ✓ Green ✓ Multiplication ✓ 0,0583	P	1
5.2	$\frac{3 \checkmark a}{8 \checkmark a}$	✓ Numerator ✓ Denominator	P	2
5.3.1	2,3 + 12 + 7 ✓a = 21,3 cm ✓a	✓ Addition ✓ 21,3 cm	M	1
5.3.2	$A = \frac{1}{2} \times 12 \times 7$ ✓a = 42 mm²✓a	✓ Substitution ✓ 42 mm²	M	2
5.4.1	R20 800 × ✓m 13 ✓ma = R270 400 ✓a	✓ Multiply ✓ 13 ✓ R270 400	F	1
5.4.2	A. R270 400 ✓a B. R64 500 ✓a C. R53 832 ✓a	✓ R270 400 ✓ R60 600 ✓ R52 818	F	3
5.5.1	23 000 × 24,75% ✓m × 2 ✓ma = R11 385 ✓ca	✓ 24,75% of… ✓ Multiplication by 2 ✓ R11 385	F	2
5.5.2	23 000 + 11 385 ✓ma = R34 385 ✓ca	✓ Addition ✓ R34 385	F	1
5.5.3	34 385 ÷ 24 ✓ma =R1 432,71 ✓ca	✓ Division by 24 ✓ R1 432,71	F	1
				[24]

IEB Copyright © 2020