NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2024

MATHEMATICAL LITERACY: PAPER II

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.

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Q1	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy		**ca** continued accuracy **ma** method accuracy **r** rounding	**M Measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
1.1.1	6	2	Reading from map.	M&P	1
1.1.2	South Atlantic Ocean or Atlantic Ocean Indian Ocean	2	Reading from map.	M&P	1
1.1.3	Northern Cape Eastern Cape	2	Reading from map.	M&P	1
1.1.4	Bar Scale or Line Scale or Linear Scale	2	Reading from map.	M&P	1
1.2.1	The answer must be measured from the final printed version. 111 mm a (110 mm – 113 mm) Or 11,1 cm (11,0 cm – 11,3 cm) Or 11 cm	2	Measuring	M&P	1
1.2.2 (a)	N2	2	Reading from map.	M&P	1
1.2.2 (b)	National	2	Knowledge road names.	M&P	1
1.2.3	Knysna Elephant Garden Route National Park **Alternative Answers** Knysna Lake Area Tsitsikamma NP Wilderness NP	2	Finding places from map key.	M&P	1
1.3.1	R155	2	Reading from context	M	1

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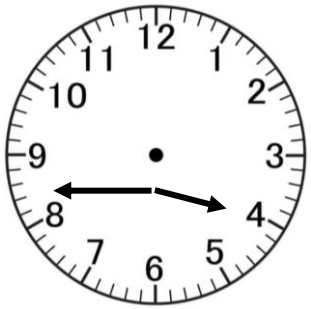
1.3.2	20 000 grams 7000 grams **(1 mark only)** 27 000 grams **(1 mark only)**	2	Conversions kg to grams	M	1
1.3.3 (a)	Volume is the amount of space of a 3D object	2	Knowledge volume	M	1
1.3.3 (b)	C volume = length × breadth × height	2	Knowledge formula	M	1
1.3.3 (c)	D cm^2	2	Knowledge units	M	1
1.4.1 (a)	13:00 or 1:00 pm	2	Knowledge reading time	M	1
1.4.1 (b)	Ten past three Or Fifteen ten	2	Knowledge time format: Words	M	1
1.4.2	 hour minute	2	Knowledge time format: Analog Minute hand on 9 Hour hand between 3 and 4 **-1 if hands are in the right place but the same length**	M	1

Q2	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy		**ca** continued accuracy **ma** method accuracy **r** rounding	**M Measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
2.1.1	What you see when you look at something from directly above. **Alternate solutions** Bird's eye view top view.	2	Plan knowledge	M&P	1
2.1.2	$Area = 2{,}8\ m \times 2{,}8\ m$ $Area = 7{,}84\ m^2$ Accept: $7{,}84\ m^2$ or $7{,}8\ m^2$	2	$2{,}8\ m \times 2{,}8\ m$ $7{,}84\ m^2$	M	2
2.1.3 (a)	$Length = 157{,}28 \times 2{,}54$ $Length\ = 399{,}9992$ $Length\ = 400\ cm$	2	$Length = 157{,}28 \times 2{,}54$ $Length\ = 399{,}9992$	M	2

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2.1.3 (b)	$Area = 400\ cm \times 400\ cm$ $Area = 4\ m \times 4\ m$ $Area = 16\ m^2$ $\therefore Area\ of\ wooden\ deck = 16\ m^2 - 7{,}84\ m^2$ $\therefore Area\ of\ wooden\ deck = 8{,}16\ m^2$ **Alternate Solution** $Area = 399{,}99\ cm \times 399{,}99\ cm$ $Area = 3{,}99\ m \times 3{,}99\ m$ $Area = 15{,}92\ m^2$ $\therefore Area\ of\ wooden\ deck = 15{,}92\ m^2 - 7{,}84\ m^2$ $\therefore Area\ of\ wooden\ deck = 8{,}08\ m^2$ **Alternative (3 marks only)** $Area = 400\ cm \times 400\ cm$ $Area = 160\ 000\ cm$ $Area = 1\ 600\ m^2$ $\therefore Area\ of\ wooden\ deck = 1600\ m^2 - 7{,}84\ m^2$ $\therefore Area\ of\ wooden\ deck = 1592{,}16\ m^2$	4	$Area = 4\ m \times 4\ m$ conv $Area = 16\ m^2$ area $= 16\ m^2 - 7{,}84\ m^2$ Subtract chess board area $= 8{,}16\ m^2$ The final area of the deck.	M	3
2.1.4 (a)	$Width = (4\ m - 2{,}8\ m) \div 2$ $Width = 1{,}2\ m \div 2$ $Width = 0{,}6\ m \times 1000 = 600\ mm$ **Alternate Solution** $Full\ width = 4\ m \times 1000 = 4\ 000\ mm$ $With\ of\ board = 2{,}8\ m\ \times 1000 = 2800\ mm$ $Width = (4000\ mm - 2800\ mm) \div 2$ $Width = 1200\ mm \div 2$ $Width = 600\ mm$	3	$1{,}2m$ subtracting the length of the chess board. $0{,}6\ m$ dividing the answer by 2 conversion to mm $\times 1000$ $600\ mm$	M	2

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2.1.4 (b)	$Length\ of\ decking = 4000\ mm - 600\ mm$ $Length\ of\ decking\ = 3400\ mm$ $Number\ of\ boards\ for\ length = 3400\ mm \div 1700\ mm$ $Number\ of\ boards\ for\ length = 2$ $Number\ of\ boards\ for\ width = 600\ mm \div 120\ mm$ $Number\ of\ boards\ for\ width = 5$ $Number\ of\ boards = 2 \times 5 \times 4 = 40$	6	$= 4000\ mm - 600\ mm$ $= 3400\ mm$ $= 3400\ mm \div 1700\ mm$ Dividing lengths $= 2$ $600\ mm \div 120\ mm$ Dividing widths $= 5$ $= 40$ Getting total tiles by multiplying	M	3
2.1.4 (c)	$Cost = 40 \times 260 \times 1{,}15$ $Cost = R10\ 400 \times 1{,}15$ $Cost = R11\ 960$ **Alternate Solution** $Cost = 40 \times 26$ $VAT = R10\ 400 \times 15\%$ $VAT = R1560$ $Cost = R10\ 400 + R1560 = R11\ 960$ **Alternate Solution** $Cost\ of\ tile = R260\ \times 1{,}15$ $Cost\ of\ tile = R299$ $Cost = R299 \times 40 = R11\ 960$	3	$= R10\ 400$ multiplying number of boards by 260 $1{,}15$ multiply to get VAT inclusive price. $= R11\ 960$	M	3
2.2.1	$Vacant\ squares = 64 - 16 - 16$ $Vacant\ sqaures = 32$ **Alternate Solution (2 marks only)** $Vacant\ squares = 64 - 16$ $Vacant\ sqaures = 48$	3	$subtracting\ 32$ $= 32$	M	2
2.2.2	$White = 32a$ $Black = 32a$	2	White 32 Black 32	M	2

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2.2.3	$Area\ of\ tile = 350\ mm \times 350\ mm$ $Area\ of\ tile = 122\ 500\ mm^2 \div\ 1000^2$ $Area\ of\ tile = 0{,}1225\ m^2$ $Area\ of\ tiles = 0{,}1225\ m^2 \times 32$ $Area\ of\ tiles = 3{,}92\ m^2$ $Area\ to\ paint = 7{,}84\ m^2$ $\therefore Number\ of\ tins = 1$ or Dumisani is correct **Alternative Solution** $Side\ of\ tile = 350\ mm \div 100 = 0{,}35\ m$ $Area\ of\ tiles = 0{,}35m \times 0{,}35m$ $Area\ of\ tile = 0{,}1225$ $Area\ of\ tiles = 0{,}1225\ m^2 \times 32$ $Area\ of\ tiles = 3{,}92\ m^2$ $Area\ to\ paint = 7{,}84\ m^2$ $\therefore Number\ of\ tins = 1$ or Dumisani is correct **Alternative Solution** $Side\ of\ tile = 350\ mm \div 100 = 0{,}35\ m$ $Area\ of\ tiles = 0{,}35m \times 0{,}35m$ $Area\ of\ tile = 0{,}1225$ $Area\ of\ tiles = 0{,}1225\ m^2 \times 32$ $Area\ of\ tiles = 3{,}92\ m^2$ $Litres\ of\ paint = 3{,}92\ m^2 \div 14{,}3$ $Litres\ of\ paint = 0{,}55\ l$ or Dumisani is correct **Alternative Solution** $Side\ of\ tile = 350\ mm \div 100 = 0{,}35\ m$ $Area\ of\ tiles = 0{,}35m \times 0{,}35m$ $Area\ of\ tile = 0{,}1225$ $Area\ of\ tiles = 0{,}1225\ m^2 \div 14{,}3$ $Area\ of\ tiles = 0{,}00857\ m^2 \times 32$ $Area\ to\ paint = 0{,}2741m^2 \times 2$ $\therefore Number\ of\ tins = 0{,}55l$ or Dumisani is correct	7	$= 350\ mm \times 350\ mm$ Calculate area of tile $\div 1000^2$ Area conversion to m^2 $0{,}1225\ m^2$ multiply by 32 $3{,}92\ m^2$ Double for two coats $7{,}84\ m^2$ Conclusion one tin	M	4

Q3	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy Length		**ca** continued accuracy **ma** method accuracy **r** rounding	**M Measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
3.1.1	$Length = 70\ m \times 5$ $Length = 350\ m$	2	Multiply $70\ m \times 5$ $= 350\ m$	M	2
3.1.2	$Area = 3{,}142 \times 350^2$ $Area = 384\ 895\ m^2\text{unit}$ **Alternative Solution** $Area = \pi \times 350^2$ $Area = 384\ 845{,}10\ m^2\text{unit}$	3	Substitution correctly $= 384\ 895$ $m^2\text{unit}$	M	2
3.1.3	$Area = 384\ 895 \div 10\ 000$ $Area = 38{,}4985\ hectares$ $Area = 38{,}5\ \ hectares\text{r}$ **Alternative Solution** $Area = 384\ 845{,}10 \div 10\ 000$ $Area = 38{,}48510\ hectares$ $Area = 38{,}5\ \ hectares\text{r}$	3	Dividing by $10\ 000$ $= 38{,}4985\ hectares$ Rounding to 1 d.p. $38{,}5\ \ hectares\text{r}$	M	2

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3.2.1	$a^2 = 12^2 - 9^2$ $a = 7{,}94\ feet$ $AB = 15{,}87\ feet$ $AB = 15{,}87 \times 0{,}3048$ $AB = 4{,}84\ m$ $AB = 5mr$ **Alternate Solution** $c = 0{,}3048 \times 12 = 3{,}6576\ m$ $b = 0{,}3048 \times 9 = 2{,}7432\ m$ $AB = 2 \times \sqrt{3{,}6576^{\,2} - 2{,}7432^2}$ $AB = 2 \times 2{,}4193m$ $AB = 4{,}8385$ $AB = 5\ mr$	6	Using Pythagoras correctly $a^2 = 12^2 - 9^2$ $a = 7{,}94\ feet$ Double length $AB = 15{,}87\ feet$ Conversion feet to m $AB = 15{,}87 \times 0{,}3048$ $AB = 4{,}84\ m$ $AB = 5\ mr$	M	3
3.2.2	$d = 1160\ mm \div 1000 = 1{,}16$ m $c = 3{,}142 \times 1{,}16m$ $c = 3{,}64m$ **Accept 3,645m**	3	Conversion mm to m $= 1{,}16$ m Substituting correctly $c = 3{,}142 \times 1{,}16m$ $c = 3{,}64m$	M	2
3.2.3	$Time = 2200\ m\ \times 2min/m$ $Time = \ 4400\ min$ $Time = 73\ hours\ 20$min **Alternate Solution** $Rate = 2min/metre \div 60 = \frac{1}{30} hours\ per\ metre$ $Time = 2200\ m \times \frac{1}{30} = 73{,}33\ hours$ $Time = 73hours\ 20$min **Alternate Solution (3 marks onl**y) $Time = 2200\ \div 2min/m$ $Time = 1100\ min$ $Time = 18\ hours\ 20\ min$	5	2200 m converting to metres $2{,}2\ km\ \times 2min/m$ $= 4400\ min$ $= 73\ hours\ 20\ min$ Converting to hours and min	M	3

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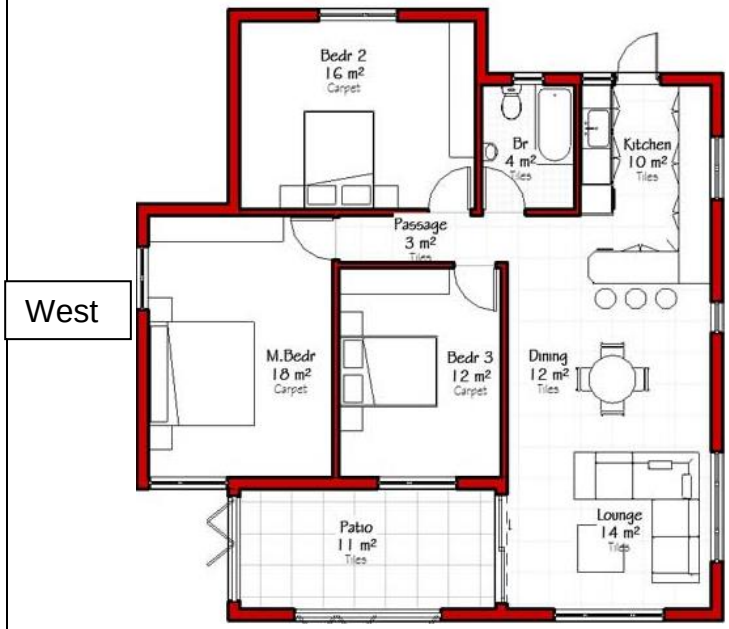
3.3.1	$Volume = 3{,}142 \times 8^2 \times 3500$ $Volume = 703\,808\ cm^3$ **Alternative Solution** $Volume = \pi \times 8^2 \times 3500$ $Volume = 703\,716{,}75\ cm^3$	3	8 finding radius Substituting into formula $= 703\,808\ cm^3$	M	2
3.3.2 (a)	$Number\ of\ pipes = 420\ m \div 35\ m$ $Number\ of\ pipes = 12$	3	Length of arm Dividing by pipe length 12	M	2
3.3.2 (b)	$Total\ volume = 703\,808 \times 12$ $Total\ volume = 8\,445\,696\ cm^3$ $Total\ volume = 8\,445\,696 \div 1\,000\,000$ $Total\ volume = 8{,}445696\ kl$ $Total\ volume = 8\ klr$ **Alternative Solution** $Total\ volume = 703\,716{,}75 \times 12$ $Total\ volume = 8\,444\,601\ cm^3$ $Total\ volume = 8\,444\,601 \div 1\,000\,000$ $Total\ volume = 8{,}444\,601\ kl$ $Total\ volume = 8\ klr$	5	Multiplying volume by number of pipes. $8\,445\,696 = cm^3$ Conversion to kl $\div 1\,000\,000$ $= 8{,}445696\ kl$ Rounding $= 8\ klr$	M	3

Q4	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy		**ca** continued accuracy **ma** method accuracy **r** rounding	**M Measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
4.1.1	Floor plan or House plan or blueprints	2	Knowledge of plans	M&P	1
4.1.2	 West	2	Knowledge of plan direction North is at the top of page. West	M&P	1
4.1.3	The answer must be measured from the final printed version. (115 mm – 119 mm) 117 mm: 11 210 mm 1: 95,81 1: 100r	4	Measuring 117 mm Writing ratio in the correct order $117mm: 11210\ mm$ Dividing both by 117 1: 95,81 Writing in unit form $1: 100\text{r}$	M&P	3

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Q4	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy		**ca** continued accuracy **ma** method accuracy **r** rounding	**M Measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
4.1.4	This is to help maximise the space. **Alternative Solution** As the passage is a walkway don't want to walk into or around open doors. **Alternative Solution** Bedroom doors must always open into the bedroom by SA law. **Alternative Solution** If a child/person accidentally locks themselves in the bedroom, it's easier to break down an inward door to get them out.	2	maximise space of the bedroom or Door would block the passage. or Easier to breakdown inward opening door in emergency.	M&P	4
4.1.5	Only one bathroom **Alternative Solution** No garage shown **Alternative Solution** Not north facing **Alternative Solution** Only 3 bedrooms, two members would have to share one of the rooms.	2	Any one appropriate idea based on plan.	M&P	4
4.2.1	B South elevation	2	Correct elevation side elevation.	M&P	4

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4.2.2	West Elevation	2	Correct elevation side elevation.	M&P	4
4.2.3	The answer must be measured from the final printed version. $Height = 5cm \times 100 = 500\ cm$ $height = 5\ m$ Answer only full marks	4	Measuring height cm Multiplying by scale $= 500\ cm$ Converting to metres $5\ m$	M&P	3
4.3	Navy Blue and Red Navy Blue and Green Grey and Red Grey and Green	4	Navy Blue and Red Navy Blue and Green Grey and Red Grey and Green	P	2
4.4.1	Friday 10 May **Alternative Solution** 10 May **Alternative Solution** Friday	2	Friday 10 May	P	2
4.4.2	$P(Not\ Rain) = 100\% - 23\%$ $P\ (Not\ Rain) = 77\%$	2	Subtract 23% from 100% 77%	P	2
4.4.3	$\mathrm{P(Temp\ above\ 20℃)} = \frac{1}{3}$ **Alternative Solution words** Unlikely or not very likely or highly unlikely **Alternative Solution** $\mathrm{P(Temp\ above\ 20℃)} = 0{,}33$ **Alternative Solution** $\mathrm{P(Temp\ above\ 20℃)} = 33\%$	2	1 3	P	2

Q5	Marking guideline	Marks	Skills assessed	Topic	Level
KEY	**a** accuracy **m** method **mca** method continued accuracy		**ca** continued accuracy **ma** method accuracy **r** rounding	**M measurement** **M&P Maps & Plan** **P Probability**	**1** KN **2** RP **3** MSP **4** R&R
5.1.1	N3 and N2	2	Correct highways identified.	M&P	1
5.1.2	Harrismith 289 km from Durban and 268 km from Johannesburg	2	Harrismith Distances used to explain choice.	M&P	4
5.1.3	$Total\ distance = 557km + 43km = 600\ km$ $Travel\ Time = \frac{600}{100}$ $Travel\ time = 6\ hours$ $Total\ time = 6\ hours + 45\ minutes$ $Total\ time = 6h45\ min$ $Start\ time = 18{:}00 - 6h45\ min$ $start\ time = 11{:}15$	7	$= 600\ km$ Substituting in formula correctly. $= \frac{600}{100}$ $= 6\ hours$ Adding stop $= 6h45\ min$ $Start\ time$ $= 18{:}10 - 6h45\ min$ $11{:}15\ am$	M&P	4
5.2.1	Hawkins Road Edward Place	2	Identifying correct roads from map	M&P	1
5.2.2 (a)	NW or NNW	2	North West	M&P	2

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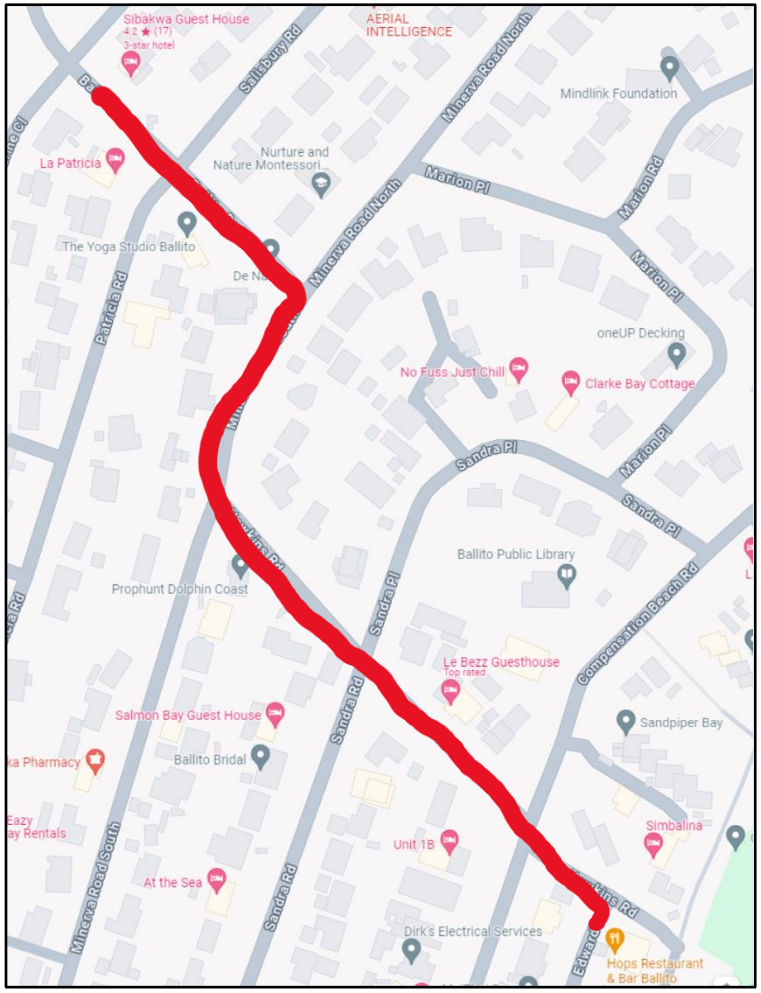
5.2.2 (b)	Most direct route 	2	Route is most direct.	M&P	4
5.2.2 (c)	Walk along Hawkins Road heading in an NW direction passing Sandra Road turn right into Minerva Road, then left into Ballito drive. Cross Patricia Road, Sibakwa Guest House will be on the right.	4	NW or NNW $Minerva\ road$ Ballito Road B&B on the right	M&P	2

Total: 150 marks

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