NATIONAL SENIOR CERTIFICATE EXAMINATION
SUPPLEMENTARY 2014

MATHEMATICAL LITERACY: PAPER I

MARKING GUIDELINES

Time: 3 hours 150 marks

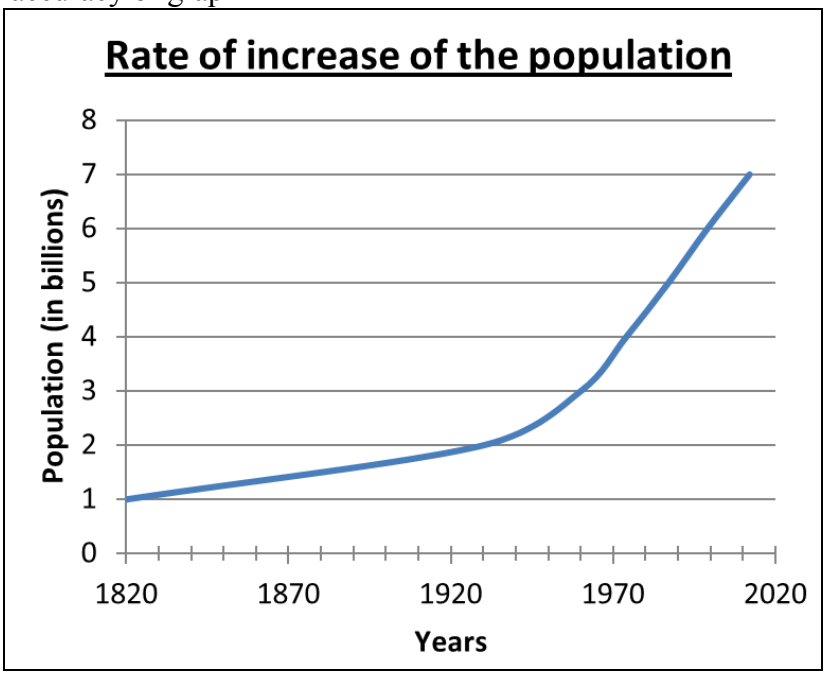
These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

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.

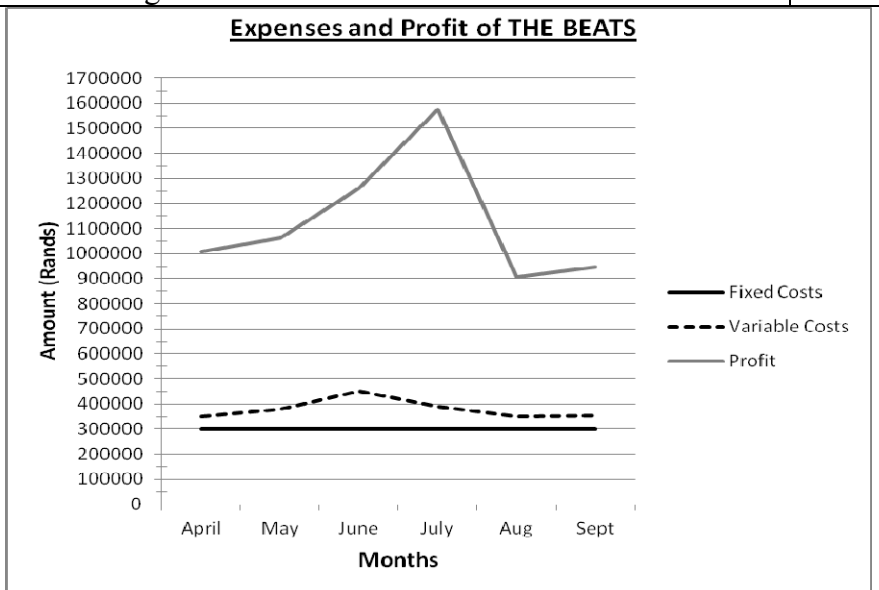
MA = Mark Allocation
AO = Answer Only
TL = Thinking Level

	Give full marks for answers only, unless question stipulates.	**MA**	**AO**	**TL**
1.1.1	$872,04 - \sqrt{484} \times 5^2 + 2,96$ = 872,04 – 550 + 2,96 [a] = 325 [a]	2	2	1
1.1.2	30% × 3 000 mℓ [m] = 900 [a] mℓ [unit]	3	3	1
1.1.3	$\frac{9}{10}\times$ [m] 10 000 000 [a] = 9 000 000 [a] (or 9 [a] × 10^6 [a]) (or 9 [a] million [a])	3	3	1
1.2	Time = Distance ÷ Speed Time = 7 000 km ÷ 920 km/h [sub] Time = 7,6086… hours [a] Time = 7 hours 36 min [ca] 31 sec [ca] (or 31,3 sec)	4	4	2
1.3.1	$\frac{4}{456}$ [a] × 100 = 0,88% [ca] (*penalise for rounding*)	2	2	1
1.3.2	$\frac{4}{454}$ [aa] or $\frac{2}{227}$	2	2	1
1.4	R375 ÷ R75 [m]= 5 blankets [a]	2	2	2
1.5.1	R5 500 × 0,11 [m] = $605 [a]	2	2	1
1.5.2	$5 500 ÷ 0,11 [m] = R50 000 [a]	2	2	1
1.6	1.6.1 True [a] 1.6.2 False [a] 1.6.3 False [a] 1.6.4 True [a] 1.6.5 False [a] 1.6.6 True [a]	6	6	1
				[28]

	QUESTION 2			
2.1	R926 000 [a]	1	1	1
2.2	3 [a]	1	1	1
2.3.1	R8 036 [a]	1	1	1
2.3.2	30% × R144 000 [m] OR R144 000 ÷ 12 [m] = R432 000 ÷ 12 [m] = R12 000 × 30% [m] = R3 600 [a] = R3 600 [a]	3	3	3
2.3.3	R1 928 650 [a] – R926 000 [m] = R1 002 650 [a]	3	3	1
2.4.1	R12 000 – R9 793 [a] = R2 207 [ca]	2	2	2
2.4.2	R7 000 [a]	1	1	1
2.4.3	R321 840 [a]	1	1	1
2.5	$F = \frac{R1250 \checkmark^a [\left(1 + \frac{4,76\%}{12} \checkmark^a\right)^{4\times12 \checkmark^a} - 1]}{\frac{4,76\%}{12} \checkmark^a}$ F = R65 948,90 [a]	5	5	2
2.6.1	3,4 cm or 3,5 cm	1	1	1
2.6.2	6 cm ÷ 3,4 cm × 1 000 [am] = 1764,71 m [ca] OR 6 cm ÷ 3,5 cm × 1 000 [am] = 1714,29 m [ca]	3	1	2
2.7.1	SE [a]	1	1	1
2.7.2	2,7 cm [a (measurement)]: 32 km 2,7cm : 3 200 000cm [a] 1 cm : 1 185 185,185 cm [m] 1 : 1 185 000 [ca]	4	1	2
2.7.3	Continue North along the R711/2 [a] Turn Right at Bethlehem onto the N5 [a] Continue until you get to Harrismith [a] Turn left onto the N3 until you get to Warden [a] OR Drive along the R712 until you reach Sterkfontein Dam Then carry on driving in a NE direction until you reach Harrismith. Then turn left onto the N3. Drive along the N3 until you reach Warden	4		1
				[31]

	QUESTION 3			
3.1.1	isiZulu [a]	1	1	1
3.1.2	Afrikaans [a]	1	1	1
3.1.3	4.4% [a]	1	1	1
3.1.4	Afrikaans; English; Xitsonga, Tshivenda; IsiNdebele; Other; Sign language. *Any two* [aa]	2	2	1
3.1.5	9,6% [a] × 59 961 443 = 4 892 298,528 ≈ 489 299 [ca] OR $9,6/100$ [a] × 59 961 443 = 4 892 298,528 ≈ 4 892 299 [ca]	2	2	1
3.2.1	100% [a]	1	1	1
3.2.2	1974 [a]	1	1	1
3.2.3	83 333 333	1	1	1
3.2.4 (a)	1960 – 1930 [m]= 30 years [a]	2	2	1
3.2.4 (b)	1 000 000 000 ÷ 4 000 000 000 [m]× 100 [m]= 25% [a]	3	3	2
3.2.4 (c)	1 000 000 000 ÷ 14 [am]= 71 428 571 [ca]	3	3	2
3.2.5 (a)	2012 –1820 = 192 years [a]	1	1	1
3.2.5 (b)	(i) 1999 [a] (ii) 179 years [a]	2	2	1
3.2.5 (c)	$\frac{7\ 000\ 000\ 000 - 1\ 000\ 000\ 000\ \checkmark^{a}}{1\ 000\ 000\ 000\ \checkmark^{a}} \times 100\ \checkmark^{m} = 600\%$ [ca]	4	4	2
3.2.6	*Heading* *y axis-Heading* *x axis-Heading* *y axis-Increments* *x axis-Increments* accuracy of graph  	8		2/3
				[33]

	QUESTION 4			
4.1.1	Water Heating	1	1	1
4.1.2	100% – 92% ^{ma} = 8% ^{ca}	3	1	2
4.1.3	$\frac{11}{100}\checkmark^{m} \times 360\checkmark^{m} = 39,6°$ ^{a} = 40° ^{ca}	4	1	2
4.2	0,4 × 60 ^{m}= 24 minutes ^{a}	2	2	2
4.3	0.75 × 5 × 4 ^{mm}= 15 hours ^{a}	3	3	2
4.4.1	(250 × 6) ^{a} ÷ 1000 ^{sub} = 1,5 kWh ^{a}	3	3	1/2
4.4.2	1,5 × 365 ^{m}= 547,5 kWh / 548 kWh ^{ca} OR 1,5 × 30 × 12 = 540 kWh	2	2	1
4.4.3	548 kWh × 117,29c ^{m} **OR** 540 kWh × 117,29c ^{m} = 64 274,92c ^{ca} = 63336,6c ^{ca} = R642,75 ^{ca} = R633,37 ^{ca} **OR** 547,5 kWh × 117,29 c = 64 216,275 = R642,16	3	3	2
4.5.1	150 ℓ ÷ 0,001 ℓ ^{m} = 150 000 cm^{3} ^{a}	2	2	1
4.5.2	150 000 cm^3 = π × radius^2 × 120cm $^{a\ sub}$ $\frac{15\ 0000}{\pi \times 120}$ = radius^2 ^{m} 397,88… = r^2 ($r^2 = 398,09$ ... if $\pi = 3,14$) r = $\sqrt{397,88\ ...}$ ^{m} r = 19,947 … cm d = 19,947 … × 2 = 39,894 … cm ^{ca} ($d = 39,904$ ... *cm* if $\pi = 3,14$) d ≈ 40 cm ^{ca}	6	6	3
				[29]

	QUESTION 5			
5.1	$h^2 = 32^2 - 6{,}5^2$ substitution subtracting $h^2 = 981{,}75$ $h = \sqrt{981{,}75}$ m $h = 31{,}33$cm ca	4	4	2
5.2	$SA = \pi \times 6{,}5 \times 32 + \pi \times 6{,}5^2$ sub $SA = 786{,}18$ a cm^2 unit	3	3	1
5.3	$V = \frac{1}{3} \times \pi \times 6{,}5^2 \times 31{,}33$ sub $V \approx 1\,386{,}17\ cm^3$ ca $V = 1\,386{,}17\ m\ell = 1{,}39\ell$ ca	3	3	2
				[10]
	QUESTION 6			
6.1 (a)	Profit = R1 657 000 – R650 000 m= R1 007 000 a	2	2	1
6.1 (b)	Income = R1 063 000 + R680 000 m = R1 743 000 a	2	2	1
6.1 (c)	Expenses = R2 265 000 – R1 575 000 m = R690 000 a	2	2	1
6.1 (d)	Profit Margin $= \frac{R946\,000}{R1\,601\,000}$ a $\times 100$ m = 59% a (59,1%)	3	3	2
6.2	July a	1	1	1
6.3	R750 000 – R680 000 m= R70 000a	2	2	1
6.4	August a	1	1	1
6.5.1	key (see graph below)	1	1	1
6.5.2	Accuracy of graph (see graph below)	4	4	1
6.5.3	Suitable heading	1	1	1
				
				[19]

Total: 150 marks