



NATIONAL SENIOR CERTIFICATE EXAMINATION  
SUPPLEMENTARY EXAMINATION – MARCH 2017

## 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.

---

**Key:** accuracy  
continued accuracy  
method  
method accuracy  
rounding  
continued accuracy based on previous answer

**QUESTION 1**

1.1 1.1.1  $A = 35 \times R60$   
 $= R2\ 100$  (2)

$B = (35 \times R50) + R200$   
 $= R1\ 950$  (3)

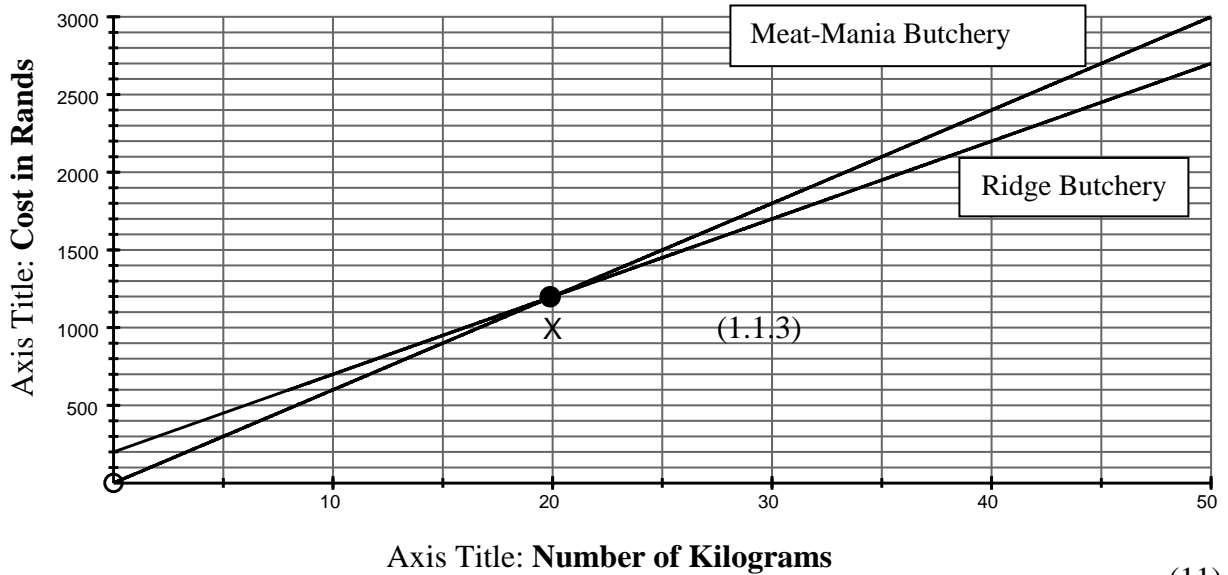
$C = R3\ 000 \div R60$   
 $= 50$  (2)

**OR**

$C = (R2\ 700 - R200) \div R50$   
 $= 50$

1.1.2

**Title: Cost of the meat from two suppliers**



(11)

1.1.4 Meat-Mania Butchery (2)

1.1.5 R900,00 (2)

1.2 1.2.1  $R2\ 889 + R110$   
 $= R2\ 999$  (2)

1.2.2  $\% \text{ deposit} = \frac{R289}{R2\ 889} \times 100\% = 10,00\%$  (2)

1.2.3  $R195 \times 30 = R5\ 850$  (2)

1.2.4 Deposit **OR** R289 (2)

1.2.5  $R5\ 850 + R289 = R6\ 139$  (2)

- 1.3 1.3.1  $600 \times R0,9451$   
 $= R567,06$  (2)
- 1.3.2  $53 \times R1,6064$   
 $= R85,14$  (2)
- 1.3.3  $R567,06 + R85,14$   
 $= R652,20$   
 $R652,20 \times 1,14$   
 $= R743, 51$  (4)
- [40]**

**QUESTION 2**

- 2.1 2.1.1 Length = 4 m  
Breadth = 2 m (2)
- 2.1.2 Radius of the outer circle =  $4 \text{ m} \div 2 = 2 \text{ m}$
- Radius of the inner circle =  $(4 \text{ m} - 0,9 \text{ m} - 0,9 \text{ m}) \div 2$   
 $= 1,1 \text{ m}$
- Area of the outer circle =  $\frac{1}{2} \times \pi \times r^2$   
 $= \frac{1}{2} \times 3,14 \times (2)^2$   
 $= 6,28 \text{ m}^2$
- Area of the inner circle =  $\frac{1}{2} \times \pi \times r^2$   
 $= \frac{1}{2} \times 3,14 \times (1,1)^2$   
 $= 1,90 \text{ m}^2$
- Area of the top of the reception desk =  $6,28 \text{ m}^2 - 1,90 \text{ m}^2$   
 $= 4,38 \text{ m}^2$  (11)
- 2.2 2.2.1  $3 \text{ m} \times 4 \text{ m} \times 6 = 72 \text{ m}^2$  (3)
- 2.2.2  $3 \text{ m} \div 19 \text{ cm}$                       **OR**                       $3 \text{ m} \div 19 \text{ cm}$   
 $= 300 \text{ cm} \div 19 \text{ cm}$                        $= 3 \text{ m} \div 0,19 \text{ m}$   
 $= 15,78 \dots$                                        $= 15,78$   
 $= 16$      $= 16$  (4)
- 2.2.3  $(3 \text{ m} \times 2) + (4 \text{ m} \times 2) - 0,9 \text{ m} = 13,1 \text{ m}$  (4)

2.3 2.3.1  $V = \frac{1}{2} b \times ht \times \text{width}$   
 $= \frac{1}{2} \times 1,2 \text{ m} \times 0,6 \text{ m} \times 1,8 \text{ m}$   
 $= 0,648 \text{ m}^3$   
 $= 0,65 \text{ m}^3$  (2)

2.3.2  $V = \ell \times b \times ht$   
 $= 3 \text{ m} \times 1,8 \text{ m} \times 0,6 \text{ m}$   
 $= 3,24 \text{ m}^3$  (2)

2.3.3  $V = 0,65 \text{ m}^3 + 3,24 \text{ m}^3$   
 $= 3,89 \text{ m}^3$  (2)

2.4 2.4.1  $\frac{1}{6}$  (2)

- 2.4.2 (a)  $\frac{1}{6}$  very unlikely  
 (b)  $\frac{2}{6}$  or  $\frac{1}{3}$  unlikely  
 (c)  $\frac{3}{6}$  or  $\frac{1}{2}$  even chance (5)

[37]

### QUESTION 3

3.1 3.1.1 North-West (2)

3.1.2 Sun City Lake (2)

3.1.3  $A = 20\,000 \div 100\,000 = 0,2 \text{ km}$  (2)

3.1.4 (a) 17,2 cm (accept 17–17,4 cm) (2)

(b)  $17,2 \text{ cm} \times 0,2$   
 $= 3,44 \text{ km}$  (2)

(c)  $\text{Area} = \frac{1}{2} b \times \perp ht$   
 $= \frac{1}{2} \times 3 \text{ km} \times 3,44 \text{ km}$   
 $= 5,16 \text{ km}^2$  (3)

3.2 3.2.1 Swartruggens (2)

3.2.2 Koster  
 Swartruggens  
 Boshhoek (3)

[18]

**QUESTION 4**

- 4.1 4.1.1 Facebook – 1,15 billion  
Google Plus – 1 billion  
Twitter – 550 million (3)
- 4.1.2 3,17 billion – 2,94 billion = 0,23 billion  
**OR** 230 million  
**OR** 230 000 000 (2)
- 4.1.3 (a) 100% – 23%  
= 77% (2)
- (b) 1,15 billion × 23%  
= 0,2645  
= 264 500 000 (3)
- (c) 264 500 000 × 5 + (1 150 000 000 – 264 500 000) × 2,65  
= 1 322 500 000 + 2 346 575 000  
= 3 669 075 000 (4)
- 4.2 4.2.1 18–29 years (2)
- 4.2.2 50% (2)
- 4.2.3 Less than 18 years has been excluded (2)
- 4.2.4 73% – 8%  
= 65% (3)
- [23]**

**QUESTION 5**

- 5.1 5.1.1 18 million ÷ 7,3 million  
= 2,465 ...  
= 2,5  
∴ 1 : 2,5 (3)
- 5.1.2  $\text{km}^2$  : Acres  
1 : 247,105  
 $\frac{1}{247,105}$  : 1  
 $\frac{1}{247,105} \times 18 \text{ million}$  : 18 million  
72 843,52 ...  
72 844  $\text{km}^2$  (4)

5.2 5.2.1  $\frac{1}{6} \times 100$   
 $= 16,66$   
 $= 16 \text{ reams}$  (3)

5.2.2  $16 \times R45,80$   
 $= R732,80$  (2)

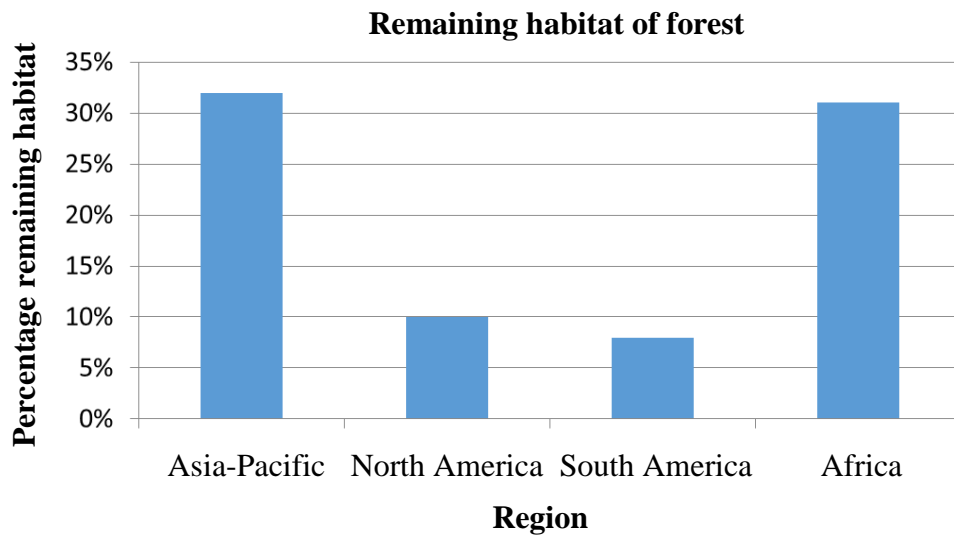
5.2.3 (a) 9 900 000 (2)

(b)  $9\,900\,000 \times R732,80$   
 $= R7\,254\,720\,000$

**OR**

$9\,900\,000 \times 16 \times R45,80$   
 $= R7\,254\,720\,000$  (3)

5.3



(6)

5.4 5.4.1 Median = 250 200 (2)

5.4.2 Mean =  $\frac{3\,466\,000 + 1\,447\,800 + \dots}{9}$   
 $= \frac{6\,784\,007}{9}$   
 $= 753\,778,55 \dots$   
 $= 800\,000$  (5)

5.4.3  $3\,466\,000 - 3\,384\,000$   
 $= 82\,000$  (2)

[32]

**Total: 150 marks**