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# **National Senior Certificate**

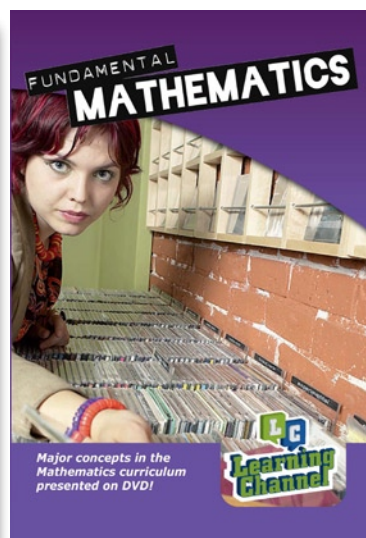
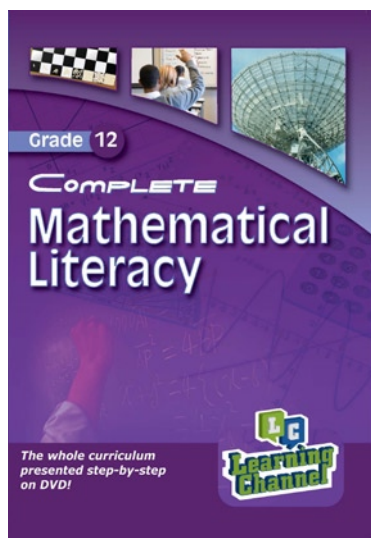
## **Grade 12**

# **Mathematical Literacy**

## **Paper 2**

## **MEMORANDUM**

**Other products for Mathematical Literacy available from Learning Channel:**



- 1.1 1.1.1 US \$450 ✓✓ (2)
- 1.1.2 R1 050 ✓✓ (2)
- 1.1.3 Cat. 1 ticket for the final: US \$900 ✓✓✓ (3)
- 1.1.4 Cat. 4 ticket for a group match: R 140 ✓✓✓ (3)
- 1.2 1.2.1 R9,00 to 1 US\$ ✓✓ (2)
- 1.2.2 January 2008 ✓✓ (2)
- 1.2.3 November 2008 ✓✓ (2)
- 1.2.4 R7,00 to 1 US\$ ✓✓
- Take the price of any ticket in ZAR and divide it by the price of the same ticket in US\$. For example, Cat. 1 opening match:  $3\ 150 \div 450 = 7$  ✓✓. (4)
- 1.2.5 (a)  $1\ 120 \div 7 = 160$  ✓✓
- (b)  $250 \times 7 = 1\ 750$  ✓✓ (4)
- 1.3 South African's have been advantaged by the use of the R7,00 to 1 US\$. ✓✓ In the other months before 2010 the exchange rate was always higher ✓✓, and if these rates had been used, the tickets for South Africans would have been more expensive. ✓✓ (6)
- 2.1 2.1.1 18 tournaments ✓✓ (2)
- 2.1.2 Spain ✓✓ (2)
- 2.1.3 32 matches ✓✓ (2)
- 2.1.4 2 500 000 tickets ✓✓ (2)
- 2.1.5  $\approx 2\ 750\ 000 \div 64 \approx 43\ 000$  ✓✓✓✓ (3)
- 2.2 2.2.1 The line graph creates the impression that attendance at the World Cups has seen a steady increase from the first tournament to the present – with a peak in attendance at the 1994 tournament in the USA. We get this impression because the graph is increasing from left to right. ✓✓✓✓ (4)
- 2.2.2 The number of matches has also increased over the years from 17 matches in 1930 to 64 matches at each tournament since France in 1998. ✓✓✓✓ (4)
- 2.2.3 (a)  $\approx 1\ 000\ 000 \div 22 \approx 45\ 000$  ✓✓
- (b)  $\approx 1\ 600\ 000 \div 32 \approx 50\ 000$  ✓✓
- (c)  $\approx 3\ 600\ 000 \div 52 \approx 69\ 000$  ✓✓
- (d)  $\approx 3\ 400\ 000 \div 64 \approx 53\ 000$  ✓✓ (8)
- 2.2.4 Average match attendance has not varied much over the years. This is almost certainly the result of limited stadium capacity ✓✓ (2)
- 2.2.5 The people building stadiums would be interested in the average match attendance – this will impact on the size of the stadiums they manufacture. ✓✓
- The people running the tournament would be interested in the total number of tickets sold as this impacts on budgeting for the tournament. ✓✓ (4)
- 3.1 3.1.1 Johannesburg ✓✓ (2)
- 3.1.2 17 June, 16:00 ✓✓ (2)
- 3.1.3 The Republic of Korea ✓✓ (2)
- 3.1.4 Thursday ✓✓ (2)

- 3.1.5 Johannesburg → Mangaung/Bloemfontein → Durban ✓✓✓✓ (4)
- 3.2 3.2.1 Monday ✓✓ (2)
- 3.2.2 18:50 ✓✓ (2)
- 3.2.3 16:00 on Tuesday ✓✓ (2)
- 3.2.4 08:00 on Wednesday ✓✓ (2)
- 3.2.5 Abadom will be in Bloemfontein to watch the match against Greece on Thursday 17 June. ✓✓ The first time that he can take train 61002 to Durban is on Tuesday 22 June at 16:00 – the same time that the match starts in Durban. ✓✓ This train will not get him to Durban on time. ✓✓ (6)
- 3.3 Several solutions are possible. One option:
- 74205 departs JHB at 14:20 on 14 June, arrives BLM at 21:36 on 14 June ✓✓✓✓
  - 57035 departs BLM at 18:00 on 18 June, arrives JHB at 08:10 on 19 June ✓✓✓✓
  - 76009 departs JHB at 07:44 on 20 June, arrives DBN at 07:10 on 21 June ✓✓✓✓
  - 67010 departs DBN at 19:15 on 23 June, arrives JHB at 07:44 on 24 June ✓✓✓✓ (15)
- 4.1 4.1.1 91 m ✓✓ (2)
- 4.1.2 190 m ✓✓ (2)
- 4.2  $3\text{cm} : 91\text{m} = 7\text{cm} : x$  ✓✓✓✓  
 $\Rightarrow x = \frac{91 \times 7}{3}$  ✓✓✓✓  
 $\approx 210\text{ m}$  ✓✓ (8)
- 4.3 4.3.1  $H \geq \frac{220\text{ m}}{500}$  ✓✓  
 $H \geq 0,44\text{ m}$  ✓✓ (4)
- 4.3.2 horizontal length =  $20 \times 0,7 \times 0,44 = 6,16\text{ m}$  ✓✓  
vertical height =  $8 \times 0,44 = 3,52\text{ m}$  ✓✓ (4)
- 5.1 5.1.1 50–1 ✓✓ (2)
- 5.1.2 100 – 1 ✓✓ (2)
- 5.2.1 winnings =  $12 \times 25 = \text{R}300$  ✓✓✓  
payout = winnings + bet =  $\text{R}300 + \text{R}25 = \text{R}325$  ✓✓✓✓ (6)
- 5.2.2 payout = bet +  $12 \times \text{bet}$  ✓✓  
 $\therefore 13 \times \text{bet} = \text{R}2\ 080$  ✓✓  
 $\therefore \text{bet} = \text{R}2\ 080 \div 13 = \text{R}160$  ✓✓ (6)
- 5.3 5.3.1 New Zealand/North Korea ✓  
The odds are the highest: 1500 – 1 ✓✓ (3)
- 5.3.2 Spain ✓  
The odds are the lowest:  $9 - 2 = 4,5 - 1$  ✓✓ (3)
- 5.3.3 Although South Africa has not been given odds as low as those of New Zealand/North Korea at 1 500 – 1, the odds for South Africa are nonetheless 100 – 1, which is not very favourable. The bookmakers do not expect South Africa to win the tournament. At best they give them a very slight chance. ✓✓✓✓ (3)