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National Senior Certificate

Grade 12

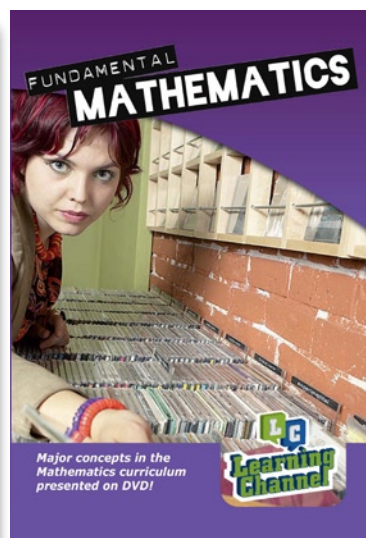
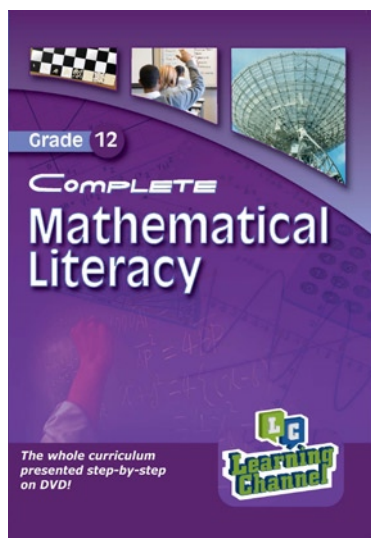
Mathematical

Literacy

Paper 1

MEMORANDUM

Other products for Mathematical Literacy available from Learning Channel:

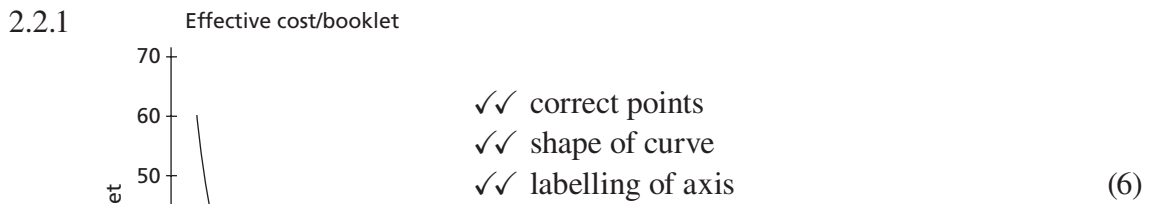


- 1.1 1.1.1 $41,57c/kWh + 24,8\% = 51,88c/kWh$ ✓✓ (2)
 1.1.2 $51,88c/kWh + 25,8\% = 65,27c/kWh$ ✓✓
 $65,27c/kWh + 25,9\% = 82,17c/kWh$ ✓✓ (4)
 1.1.3 $\% \text{ change} = \frac{(82,17 - 41,57)}{41,57}$
 $= 97,67\%$ ✓✓✓ (3)
 1.2 1.2.1 24 389 GWh ✓✓ (2)
 1.2.2 4% ✓✓ (2)
 1.2.3 (a) $15\% \times 213\ 881 = 32\ 082$ GWh ✓✓✓
 (b) $\frac{59\ 965}{213\ 881} = 28\%$ ✓✓✓
 Note – alternate approaches are possible. (6)
 1.3.1 ≈ 154 (accept 154 ± 2) ✓✓ (2)
 1.3.2 75% of 200 = 150 ✓✓✓ (3)

2.1

No. of booklets	100	300	500	700
Printing costs	6000	8000	10000	12000
Effective cost per booklet	R60	R26,67	R20,00	R17,14

✓✓✓
✓✓✓
✓✓✓
✓✓✓



- 2.2.2 (a) 380 ± 10 ✓✓✓
 (b) see marking on graph for (2.2.1) ✓✓✓
 2.3 Income – expenses = profit ✓
 $23 \times \text{bks} - (\text{R}5\ 000 + 10 \times \text{bks}) = \text{R}5\ 000$ ✓✓
 $13 \times \text{bks} = \text{R}10\ 000$
 $\text{bks} \approx 770$ ✓✓ (5)
 2.4 770 booklet \Rightarrow 800 booklets ✓
 Cost = $\text{R}5\ 000 + 8 \times 1\ 000 = \text{R}13\ 000$ ✓✓ (3)

3.1 Missing values only

	Debit	Credit	Balance	
20 Feb		R1 150,00	-R6 850,00	✓✓✓
28 Feb	-R137,00		-R6 987,00	✓✓✓
25 Mar		R3 450,00	-R3 537,00	✓✓✓
31 Mar	-R70,74		-R3 607,74	✓✓✓

(12)

3.2 To settle loan: income \geq R3 607 ✓

$$R3\ 607 \div 23 \approx 157 \checkmark\checkmark$$

She must sell at least 157 booklets.

(3)

3.3 To break even Maxine must also cover her own investment of R5 000.

To break even: income \geq R5 000 ✓

$$R5\ 000 \div 23 \approx R218 \checkmark\checkmark$$

She must sell at least 218 booklets. ✓

(4)

4.1 4.1.1 R46 000 ✓✓

(2)

4.1.2 R12 960 ✓✓

(2)

4.2 $R95\ 000 \times 18\% = R17\ 100 \checkmark\checkmark$

$$R17\ 100 - \text{rebate} = R17\ 100 - R8\ 280 \checkmark\checkmark = R8\ 820 \checkmark$$

(5)

4.3 4.3.1 Tax payable = $R70\ 650 + (R350\ 000 - R305\ 000) \times 35\% - R8\ 280 \checkmark\checkmark\checkmark$

$$= R70\ 650 + R15\ 750 - R8\ 280$$

$$= R78\ 120 \checkmark\checkmark$$

(5)

$$4.3.2 \text{ Effective tax rate} = \frac{78\ 120}{350\ 000} \checkmark$$

$$= 22,32\% \checkmark\checkmark$$

(3)

5.1 5.1.1 1 day ✓✓

(2)

5.1.2 7 days ✓✓

(2)

5.1.3 2 tablets daily ✓✓

(2)

5.2 1 day before trip + 10 days of trip + 7 days after trip = 18 days ✓✓✓

$$18 \text{ days} = 18 \text{ tablets } \checkmark$$

(4)

5.3 5.3.1 Adult tablets:

$$2 \times (1 \text{ day} + 8 \text{ days} + 7 \text{ days}) \checkmark\checkmark\checkmark = 2 \times 16 \text{ days}$$

$$= 32 \text{ days}$$

$$= 32 \text{ adult tablets } \checkmark\checkmark$$

(5)

$$5.3.2 \text{ Child 1 (18 kg)} = 16 \text{ days} \times 1 \text{ tablet/day}$$

$$= 16 \text{ tablets } \checkmark\checkmark$$

$$\text{Child 2 (36 kg)} = 16 \text{ days} \times 3 \text{ tablet/day}$$

$$= 48 \text{ tablets } \checkmark\checkmark$$

$$\therefore 64 \text{ pediatric tablets } \checkmark\checkmark$$

(6)

$$5.3.3 \text{ Cost} = 32 \times 12 + 64 \times 8 = R896 \checkmark\checkmark\checkmark$$

(3)

- 6.1 The first sheet is 40 m long. ✓
 The second sheet overlaps the first sheet by 1 m leaving 39 m of additional plastic to cover the pitch. ✓✓
 $40 \text{ m} + 39 \text{ m} = 79 \text{ m}$ ✓
 Since $79 \text{ m} > 78 \text{ m}$ – this sheet will cover the pitch and surroundings from one side to the other. ✓ (5)
- 6.2 Working edge to edge, the sheets cover:
 $17 \text{ m} + 16 \text{ m} + 16 \text{ m} + 16 \text{ m} + \dots$ ✓✓✓
 The total distance to be covered must be $> 115 \text{ m}$ ✓
 \therefore 8 widths will be needed ✓✓
 (check $17 + 7 \times 16 = 129 \text{ m}$) (6)
- 6.3 Number of rolls needed $= 2 \times 8 = 16$ ✓✓ (2)
- 6.4 Area of pitch and surroundings $= 115 \text{ m} \times 78 \text{ m}$
 $= 8\,970 \text{ m}^2$ ✓✓
 Total area of canvas $= 16 \times 40 \text{ m} \times 17 \text{ m} = 10\,880 \text{ m}^2$ ✓✓
 $\% \text{ extra} = \frac{10\,880 - 8\,970}{8\,970} \approx 21\% \text{ extra}$ ✓✓ (6)
- 7.1 7.1.1 Cigarettes, glue, alcohol and cannabis ✓✓ (2)
 7.1.2 $\approx 32\%$ ✓✓ (2)
 7.1.3 $\approx 100\% - 25\% = 75\%$ ✓✓ (2)
- 7.2 % using alcohol after 16
 $\approx 80\% - 34\% = 46\%$ ✓✓
 \therefore number $= 46\% \times 470 \approx 220$ ✓✓✓ (5)
- 7.3 We cannot say. Some students may have used more than one of the substances listed. Since the totals of usage for all of the substances exceed 100%, it is possible that all of the respondents used one (or more) of the substances and we cannot be sure that any respondent used none. ✓✓✓✓ (4)