**MLIT**

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**MEMORANDUM**

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# ISEBE LEMFUNDO LEMPUMA KOLONI

EASTERN CAPE EDUCATION DEPARTMENT

OOS-KAAP ONDERWYSDEPARTEMENT

IIMVIWO ZEBANGA LOKUGQIBELA

NATIONAL SENIOR CERTIFICATE EXAMINATIONS

NASIONALE SENIOR SERTIFIKAAT-EKSAMEN

### SEPTEMBER 2009

|  |
| --- |
| **MATHEMATICAL LITERACY – FIRST PAPER** |

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

This memorandum consists of 9 pages.

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|  |  |
| --- | --- |
| **SYMBOL** | **EXPLANATION** |
| **M** | Method |
| **MA** | Method with Accuracy |
| **CA** | Consistent Accuracy |
| **A** | Accuracy |
| **C** | Conversion |
| **S** | Simplification |
| **RT / RG** | Reading from a table / graph |
| **F** | Choosing the correct formula |
| **SF** | Substitution in a formula |
| **O** | Opinion |
| **P** | Penalty: e.g. for: no units, incorrect rounding off etc. |
| **R** | Rounding off |

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| --- | --- | --- | --- | --- |
| **QUESTION 1** | | | |  |
|  |  |  | |  |
| 1.1 | 1.1.1 | 28,2 + 9,2 – 4 ✓  = 33,4 ✓ | *For*: 9,2  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.1.2 | 2,1 x 5,21 ✓ OR (2,1 x 5,2) + (2,1 x 0,01)  = 10,94 ✓ 10,92 + 0,021  = 10,94 | *For*: 5,21  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.1.3 | ✓  = 156,8 m ✓ | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.1.4 | 7 + 9 ✓  = 16 ✓ | *For*: *square* *roots*  A : 1 | (2) |
|  |  |  |  |  |
| 1.2 | 1.2.1 | ✓  = ✓ | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.2.2 | ✓  = 14,29 ✓ | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.2.3 | 490 x 1,32 ✓ ✓ OR 132 x 490  = R646,80 ✓ 100  = R646,80 | *For*: 1,32  M : 1  A : 1 | (3) |
|  |  |  |  |  |
|  | 1.2.4 | 1 **:** 9 ✓ |  | (1) |
|  |  |  |  |  |
| 1.3 | 1.3.1 | R24 323,04 12  = R2 026,92 |  | (2) |
|  |  |  |  |  |
|  | 1.3.2 | R2 026,92 21 ✓  = R96,52 ✓ | M : 1  A : 1 | (2) |
|  |  |  |  |  |
| 1.4 | 5 200 x R12,96 ✓  = R67 392,00 ✓ | | M : 1  A : 1 | (2) |
|  |  |  |  |  |
| 1.5 | 1.5.1 | 1,2 m x 1 000 ✓  = 1200 mm ✓ | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 1.5.2 | R102,60 1,2 ✓  = R85,50 ✓ | M : 1  A : 1 | (2) |
|  |  |  |  | **[26]** |
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| **QUESTION 2** | | | | | | | | | | | | | |  |  |
|  | | |  | | |  | | | | | | | |  |  |
| 2.1 | | | 2.1.1 | | | 15 km ✓ | | | | | | | | A : 1 | (1) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.2 | | | 20 – 6 ✓  = 14 km ✓ | | | | | | | | M : 1  A : 1 | (2) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.3 | | | They pass each other at 06:36,8 ✓  0,8 min = 0,8 x 60 sec = 48 seconds ✓  They will pass each other at:  06:36 and 48 seconds ✓  **(Between 06:36 and 06:37 give 1 mark)** | | | | | | | | RG : 1  CA : 1  A : 1 | (3) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.4 | | | To pick up/drop passengers ✓ | | | | | | | | *Opinion* | (1) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.5 | | | 25 km ✓ | | | | | | | | RG : 1 | (1) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.6 | | | 12 min – 1 min ✓  = 11 minutes ✓ | | | | | | | | M : 1  A : 1 | (2) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.1.7 | | | Average speed =  = ✓  = 109 km/h (km.h-1) ✓ | | | | | | | | SF : 1  *Conversion*  A : 1 | (3) |
|  | | |  | | |  | | | | | | | |  |  |
| 2.2 | | | 2.2.1 | | | ✓ x 219 ✓  = 73 gold medals ✓A | | | | | | | | RG : 1  M : 1  A : 1 | (3) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.2.2 | | | ✓ x 100 ✓  = 3,33% gold medals ✓ | | | | | | | | RG : 1  M : 1  A : 1 | (3) |
|  | | |  | | |  | | | | | | | |  |  |
|  | | | 2.2.3 | | | ✓ x 360° ✓  = 100,8° ✓ | | | | | | | | RG : 1  M : 1  A : 1 | (3) |
|  | | |  | | |  | | | | | | | | |  |
| 2.3 | | | 2.3.1 | | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **COUNTRY** | **GOLD** | **SILVER** | **BRONZE** | **TOTAL** | | Australia | 82 | 62 | 62 | ***206*** | | England | 54 | 52 | ***59*** | 165 | | India | ***32*** | 21 | 19 | 72 | | Canada | 31 | 41 | 42 | ***114*** | | New Zealand | 11 | 13 | 21 | 45 | | South Africa | 9 | ***20*** | 17 | 46 | | | | | | | | | | (5) |
|  | | |  | | |  | | | | | | | | | **[27]** |
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| **QUESTION 3** | | | | | | | | | | | | | | |  |
|  | | |  | | |  | | | | | | | | |  |
| 3.3 | | | 3.1.1 | | | (i) Butternut carry bag  (ii) Milk full cream UHT 1ℓ  (iii) Brown onions Any 3  (iv) Bananas | | | | | A: 1  A: 1  A: 1 | | | | (3) |
|  | | |  | | |  | | | | | | | | |  |
|  | | | 3.1.2 | | | 19,99 + 7,99 + 2,35 + 2,21 + 5,49 + 21,69 +14,49  =R74,21 | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.1.3 | | | 19,99 + 7,99 + 2,35 + 2,21  =R32,54 | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.1.4 | | | Bank card | | | | | | 1 : A | | | (1) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.1.5 | | | Morning | | | | | | 1 : A | | | (1) |
|  | | |  | | |  | | | | | |  | | |  |
| 3.2 | | | 3.2.1 | | | =R846 937 – (R668 220 + R54 000 + R400)  =R846 937 – R 722 620  =R124 317,00 | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.2.2 | | | Cake sale, Jeans day, Cultural day etc. | | | | | | *Any* *possible*  2 *activities*  (2 *marks*) | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.2.3 | | | R30 000 + R55000 + R42 000 + R10 000 x 2 + R50 00 + 80 186,40 + 300 699 + 66 822 x 3 +  R33 411 + R53 457,60  = R820 220,00 | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.2.4 | | | = 6,31% | | | | | | RT : 1  M : 1  A : 1 | | | (3) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.2.5 | | | R668 220,00 | | | | | | RT : 1 | | | (1) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 3.2.6 | | | A = P(1+i)n  = 75 000 (1 + 0,11)2  = 75 000(1,11)2  = R92 407,50 | | | | | | M : 1  SF : 1  A : 1 | | | (3) |
|  | | |  | | |  | | | | | |  | | | **[22]** |
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| **QUESTION 4** | | | | | | | | | | | |  | | |  |
|  | | |  | | |  | | | | | |  | | |  |
| 4.1 | | | Area = r2  = 3,14 x 1,8 x 1,8 🗸Substitution  = 10,17 m2 🗸 🗸 | | | | | | | | | M : 1  A : 1  *For Unit* | | | (3) |
|  | | |  | | |  | | | | | |  | | |  |
| 4.2 | | | 4 m + 1,8 m 🗸 Method  = 5,8 m 🗸 | | | | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
| 4.3 | | | 5 x 7 x R85,00 🗸 Substitution  = R2 975,00 🗸 | | | | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | | | | | | | |  | | |  |
| 4.4 | | | 4.4.1 | | | 59,5 m2 ÷ 32 m2 🗸 Division  = 1,86 means 2 workers 🗸 | | | | | |  | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 4.4.2 | | | 59,5 m2 ÷ 9 m2 🗸 Division  = 6,61 lit 🗸 Answer  = 7 lit 🗸 | | | | | | M : 1  A : 1  *Approximation* | | | (3) |
|  | | |  | | |  | | | | | |  | | |  |
|  | | | 4.4.3 | | | R507,50 ÷ 7 🗸 Division  = R72,50 🗸 | | | | | | M : 1  A : 1 | | | (2) |
|  | | |  | | |  | | | | | |  | | |  |
| 4.5 | | | 4.5.1 | | | Volume = 100 kilolitre Equating  100 kilolitre = 100 x 1 000🗸 x 1 000🗸 cm3 Conversion into Litres  = 100 000 000 cm3 🗸 | | | | | | x 1 000  x 1 000  A : 1 | | | (3) |
|  | | |  | | |  | | | | | | | | |  |
|  | | | 4.5.2 | | | Height = 🗸 🗸 Making h subject  h = 199,04 cm 🗸 Answer  = 2 m 🗸 | | | | | | SF: 1  SF: 1  A : 1  *Approximation* | | | (4) |
|  | | |  | | |  | | | | | | | | | **[25]** |
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| **QUESTION 5** | | | | | | | | | | | | | | |  |
|  | |  | | | | | | |  | | | | | |  |
| 5.1 | | 5.1.1  Frequency for number of daily visitors to the aquarium   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 0 – 9  10 – 19  20 – 29  30 – 39  40 – 49  60 – 69  80 – 89  50 – 59  70 – 79  90 – 99  0  2  4  6  8  10  12  14  16  18 |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | | Number of days |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |   Number of visitors | | | | | | | | | | | | |  |
|  | |  | | | | | | | | | | | | |  |
|  | | ANY 3 columns drawn correct ✓✓✓  Columns are touching ✓  All columns are the same width ✓ | | | | | | | | | | | | | (5) |
|  | |  | | | | | | | | | | | | |  |
|  | | 5.1.2 | | | | | On the same graph as for QUESTION 5.1.1. Any two points in the middle of the bar ✓✓  Joining the points with a line ✓ | | |  | | | | | (3) |
|  | |  | | | | |  | | |  | | | | |  |
| 5.2 | | 5.2.1 | | | | | R400,00 ✓ | | | A : 1 | | | | | (1) |
|  | |  | | | | |  | | |  | | | | |  |
|  | | 5.2.2 | | | | | Labour cost = (3 hours x R250) + R400 ✓  = R750 + R400 ✓  = R1 150 ✓ | | | M : 1  S : 1  A : 1 | | | | | (3) |
|  | |  | | | | |  | | |  | | | | |  |
|  | | 5.2.3 | | | | | Time = (R2 900 – R400) ✓M  = R2 500 R250 ✓M  = 10 hours ✓CA | | | M : 1  M : 1  A : 1 | | | | | (3) |
|  | |  | | | | |  | | |  | | | | |  |
|  | | 5.2.4 | | | | | 340 minutes 60 = 5,666667 hours ✓  Buddy’s took 5 hours✓ and 40 minutes✓ | | | *Conversion*  A : 1  (5 *Hours*)  A : 1  (40 *Minutes*) | | | | | (3) |
|  | |  | | | | |  | | | | | | | |  |
|  | 5.2.5 | | | | | | |  | | | | | | |  |
|  |  | | | | | | |  | | | | | | |  |
|  |  | | | | | | | Any two points on graph ✓✓  Joining the points with a line ✓  Cuts Y-axis at 400 ✓ | | | | | | | (4) |
|  |  | | | | | | |  | | | | | | | **[22]** |
|  |  | | | | | | |  | | | | | | |  |
| **QUESTION 6** | | | | | | | | | | | | | | |  |
|  | | | |  | | | |  | | | | | | |  |
| 6.1 | | | | D2 | | | | | | | | | RT : 1 | | (1) |
|  | | | |  | | | |  | | | | |  | |  |
| 6.2 | | | | N2 national road | | | | | | | | | RT : 1 | | (1) |
|  | | | |  | | | |  | | | | |  | |  |
| 6.3 | | | | 7 wine estates | | | | | | | | | RT : 1 | | (1) |
|  | | | |  |  | | | | | | | |  | |  |
| 6.4 | | | | Exit 47 | | | | | | | | | RT : 1 | | (1) |
|  | | | |  | | | | | | | | |  | |  |
| 6.5 | | | | East | | | | | | | | | RT : 1 | | (1) |
|  | | | |  | | | | | | | | |  | |  |
| 6.6 | | | | 3 | | | | | | | | | RT : 1 | | (1) |
|  | | | |  | | | | | | | | |  | |  |
| 6.7 | | | | 1 mm on map represents 50 000 mm for real  25 mm will thus represent:  25 x 50 000 ✓ M = 1 250 000 mm in reality ✓  There is 1 000 000 mm in 1 km  = 1 250 000 mm 1 000 000 ✓  = 1,25 km ✓ | | | | | | | | | M : 1  A : 1*t*  *Conversion:* mm *to* km  CA : 1 | | (4) |
|  | | | |  | | | |  | | | | |  | |  |
| 6.8 | | | | R2,80 x 45 km ✓M = R126,00 per trip ✓A | | | | | | | | | M : 1  A : 1 | | (2) |
|  | | | |  | | | |  | | | | |  | |  |
| 6.9 | | | | 16 – 2 = 14 ✓M paying passengers  14 x R126,00 ✓M= R1 764,00 per tour ✓A | | | | | | | | | M : 1  A : 1 | | (3) |
|  | | | |  | | | |  | | | | |  | | **[15]** |
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| **QUESTION 7** | | | |  |
|  |  |  | |  |
| 7.7 | 7.1.1 | Mean = 🗸 🗸For 1 026 and division by 24  = 42,75 🗸 | *For*: 1 026  M : 1  A : 1 | (3) |
|  |  |  |  |  |
|  | 7.1.2 | 3; 3; 3; 12; 26; 29; 33; 36; 36; 38; 42; 46; 48; 50; 51; 51; 52; 57; 59; 64; 68; 69; 73; 77 🗸 Arrangement    Medien = 🗸 Method  = 47 🗸 | *For Arrangement*  M : 1  A : 1 | (3) |
|  |  |  |  |  |
|  | 7.1.3 | Mode = 3 🗸 | A : 1 | (1) |
|  |  |  |  |  |
|  | 7.1.4 | Mode 🗸 | A : 1 | (1) |
|  |  |  |  |  |
| 7.2 | 7.2.1 | R80 000 – R22 000 🗸 Method  = R58 000 🗸 | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 7.2.2 | 4 Houses 🗸 | A : 1 | (1) |
|  |  |  |  |  |
|  | 7.2.3 | Berea 🗸 Answer (1)  Expensive OR any related words/statements 🗸 | A : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 7.2.4 | 🗸 Identification and Division  = 54 houses | M : 1  A : 1 | (2) |
|  |  |  |  |  |
|  | 7.2.5 | 🗸 | M : 1  A : 1 | (2) |
|  |  |  |  | **[17]** |
|  |  |  |  |  |
|  |  |  | **TOTAL:** | **150** |