MALIET FORM 3

**MATHEMATICS**

**MARKING SCHEME**

|  |  |  |  |
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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
| **1** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  | | --- | --- | --- | --- | | **Number** | **Standard form** | **Log** |  | | 849  2.41 |  | +  0.3820 |  | |  |  | 3.3112 | M1 | | 3941 |  | 3.5956  3.3112-  3.5956 |  | |  |  |  | M1 | | 0.8039 |  |  | M1  A1 | |  | |  |  |
| **2** | X: y: Z  4 : 7 x 5  5 : 3 x 7  20 : 35 : 21 | M1  A1  **02** |  |
| **3.** | 4y = -2x + 8  Y = - ½ x + 2  M2 = 2 | M1  M1  A1  **03** |  gradient |
| **4.** |  | M1  M1  A1  **03** | 🗸 Numerator  🗸Denominator |
| **5.** | 100 x 84.2083  8420.83 – 40,000  = 44208.30  £ =  = 327 | M1  M1  M1  A1  **04** |  |
| **6** | P³q = nq – M  P³q – nq = - M  q(P³ - n) = -M  3 | M1  M1  A1 | Correct removal of |
| **7** | = (1, 13) | M1  M1  A1  3 |  |
| **8** |  |  |  |
| **9** | cm |  |  |
| **10** | Max value length=8.65,min length=8.55  Max value width=5.35,min width=5.25  Max area =8.65x5.35=46.2775  Min area=8.55x5.25=44.8875  Actual area=8.6x5.3=45.58  Absolute error =  %error= | M1  M1  A1 |  |
| **11** | x + y = 10  (10y + x ) – (10x + y) = 54  9y - 9x = 54  y – x = 6  x + y = 10  -x + y = 6  2y = 16  y = 8  x = 2  Number is 28 | M1  M1  A1 |  |
| **12** | =- |  |  |
| **13** | 9 25 i) Sin A =9/25  ii) Tan (90-A) =16/9  16 | M2  M1 |  |
| **14** | Exterior angle is 70-50=20 | M1  M1  A1 |  |
| **15** |  | M1  M1  A1 |  |
| **16** | 9:50-9:00=50minutes  Distance covered by the bus when matatu started is;  60x50/60=50km  Relative speed=60+60=120  Remaining distance=290-50=240  Time=distance /speed  240/120=2hrs  Distance =(60x2)+50=170km. | M1  M2  A1 |  |
|  | SECTION II |  |  |

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| 17 | x x =  x = 20 when y =5 and c = 9  20 =  =  K =  K =  x =  x =  x =  = 23.52  (b) y1 = 1.1u  z1=  x1 =  = k  = k 1.3444 100  134.44.  34.44% increase | B1  M1  A1  M1  A1  B1  M1  M1  M1  A1 | Substitution  Substitution  Accept alternative method |
| 18 | (a) a+2d, a+8d, a+24d | B1  M1  M1  M1  M1  A1  A1  M1  A1  M1  A1 | For substitution or equivalent |
| 19 | 1. Original Amount to be paid   =   1. New Amount to be paid   b.    Solving for x;  Either x = 12 or x = -8  Since people cannot be –ve, x = 12 members  People contributed .12-4=8 people  c. =2:3  d. | B1  B1  M1  M1  M1  M1  A1  A1  M1  A1 |  |
| 20 | C:\Users\ADMIN\Pictures\2016-10-01\128.jpg |  |  |
| 21 | -4x+12=5y  4x+5y=12     1. G of L2=3   Angle formed by L2 and x-axis =Tan-1 3=71.570  Angle formed by L1 and x-axis Tan-1-0.8 =38.660  180-(71.57+38.66) =69.770   1. G of perpendicular line =     4y-4=5x-10  4y=5x-6 | M1  M1  A1  M1  M1  M1  A1  M1  M1  A1 |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 | (a)  Determinant = (2 x 3) – ( 4 x 5)  = 6 – 20 = -14  Inverse =  Let L be the cost of hiring a lorry and Sh. b be that of hiring a bus  (b) (i) 2L + 5b = 156000  4L + 3b = 137000  (ii)  -  = -    Lorry = 15500  Bus = 25000  (c) A singular matrix has a determinant = 0    (2x – 1) – x2 = 0  2x – 1 – x2 = 0  x2 – 2x + 1 = 0  p = 1  s = -2  f = -1, -1  (x2 – x) – (x + 1) = 0  x(x-1) -1 (x -1) = 0  x = 1 | M1  A1  M1  M1  M1  A1  M1  A1 | M0 for post  multiplication  on the right  hand side |
|  |  | 10 |  |