**MATHEMATICS**

Form 3

**MARKING SCHEME**

**SECTION I**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **WORKING** | **MARKS** | **GUIDELINES** |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |   | M1M1A1 |  |
|  |  | 03 |  |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| 3 | 21 | 15 | 9 |
| 3 | 7 | 5 | 3 |
| 5 | 7 | 5 | 1 |
| 7 | 7 | 1 | 1 |
|  | 1 | 1 | 1 |

  | M1M1A1 |  |
|  |  | 04 |  |
|  |  thus  thus  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 3 |  |
|  | Ignoring negative answer | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  | Integral values | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1A1A1 |  |
|  |  | 03 |  |
|  | Numerator:Denominator  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |
|  |  | M1M1A1 |  |
|  |  | 03 |  |

**SECTION II**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **WORKING** | **MARKS** | **GUIDELINES** |
|  | 1. (i)

(ii) Juma = sh 3560Wanjiku = sh 3075Difference = 3560 – 3075 = 485 | B1B1M1M1A1M1M1M1M1A1 | For both answers |
|  |  | 10 |  |
|  | 1. (i**)**

(**ii**)    | M1M1A1M1M1M1A1M1M1A1 |  |
|  |  | 10 |  |
|  | 1. Time before the matatu started

 = 13.15 – 11.45 = Distance covered by the bus = Distance between them = Relative speed = Time taken to meet = Time they met = 1.15pm + 3 hours = 4.15pm1. Distance from town A to the point of meeting

Time = Distance from A = 1. Time taken by the matatu from B to A

The matatu reaches A = 13.15pm +6hrs = 1915hrsTime travelled by the bus when the matatu reaches A1915hrs – 1145hrs = Distance moved by bus from A = Distance outside town B | M1M1M1A1M1A1M1M1M1A1 |  |
|  |  | **10** |  |
|  |  Solving simultaneously , (x ,y)  | M1M1A1M1M1A1M1M1A1A1 |  |
|  |  | 10 |  |
|  | 1. (**i)**

(**ii**)  Total tax = 4104Net tax =  = 3048 | M1A1M1A1M1M1M1M1M1A1 |  |
|  |  | 10 |  |
|  |  | M1M1M1A1M1A1A1M1M1A1 |  |
|  |  | 10 |  |
|  | Geometric progression | M1M1A1B1B1B1B1M1M1A1 |  |
|  |  | 10 |  |
|  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 12x | -24 | -12 | 0 | 12 | 24 | 36 | 48 | 60 | 72 |
| -3x2 | -12 | -3 | 0 | -3 | -12 | -27 | -48 | -75 | -108 |
| y | -36 | -15 | 0 | 9 | 12 | 9 | 0 | -15 | -36 |

 ***2 mks for correct table*** y = 5 ( x – 2 )  y = 5 x – 10

|  |  |  |  |
| --- | --- | --- | --- |
| x | 0 | 2 | 5 |
| y | -10 | 0 | 15 |

i) roots of 3 x ( 4 – x) = ) are x = 0, x = 4 ii) Maximum value of y = 3x ( 4 – x ) when x = 2 , y = 12 the maximum value of y = 12 iii) roots of equation 3x ( 4 – x ) = 5 ( x – 2 ) is where the curve cuts the line  y = 5 (x -2 ) The roots arc x = -1 and x = 3.3 ± 0.1 | B1B1S1P1C1L1B1B1B1B1 | Table ✓B1 for both values of x |
|  |  | 10 |  |