**FORM FOUR PAPER 1**

**MARKING SCHEME**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **WORKING** | **MARKS** | **REMARKS** |
| 1 | Numerator  Denominator | M 1  M 1  A 1 |  |
| 2 |  | M1  M1  A1 | Simplification  Addition of power |
| 3 | Volume of tank to be filled =  Volume of bucket =  Number of buckets = | M 1  M 1  A 1 |  |
| 4 | C:\Users\user\Desktop\SCAN\img20190620_15050476.jpg | B 1  B 1  B 1 | Construction  Correct labelling  Complete diagram |
| 5 | Side of the pavement = LCM    Least area | B1  M1  A1 |  |
| 6 | ........... (i)  ......... (ii)  ....... (iii)  ....... (iv)  From (iii) | M 1  M 1  A 1  B 1 |  |
| 7 | F:\COMPUTER\STEP UP SERIES\EXAM\T2 2019\SCAN\img20190621_17340010.jpg | | B 1 constructing at B  B 1 constructing at C  B 1 perpendicular from A to BC  B 1 |
| 8 | =  =  =  13.42 | B1  M1  A1 |  |
| 9 | 1. Time taken = 2. Average speed = | M 1  A 1  M 1  A 1 |  |
| 10 | are similar  Shaded region = area of | M 1  M 1  A 1 |  |
| 11 |  | B1  M1  A1 |  |
| 12 | Inverse | B1  M 1  A 1 |  |
| 13 |  | M 1  A 1 |  |
| 14 |  | **b1**  **m1**  **a1** |  |
| 15 | 3420 French francs into Ksh.  Commission =    Amount of Euros received =  = 520 Euros | M 1  M 1  A 1 |  |
| 16 | Let be the reciprocal  OR | M 1  M 1  A 1 | Both values of m |
| 17 | x  14  22.25cm   1. I) Volume   Ratio  Volume of whole cone  Volume of small cone  Volume of frustum =  ii) mass of frustum  mass =  mass in kg =    Volume of material remaining =  Length of cube = |  |  |
| 18 | At intercept;  At y intercept;   1. At point of intersection, y values are equal   Point of intersection (2, 5) | M 1  A 1  M 1  A 1  M 1  A 1  A 1  M 1  M 1  A 1 |  |

19. (a)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | 0 | 0.5 |  |  |  |  |  |  |  |  |  |
|  | 38 | 28.75 | 21 | 14.75 | 10 | 6.75 | 5 | 4.75 | 6 | 8.75 | 13 | 18.75 | 26 | 34.75 | 45 | 56.75 | 70 |

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| 19 | 1. Area =   =     1. Area = | | | M 1  M 1  A 1  M 1  M 1  A 1  M 1  A 1 | |
| 20 | 1. Mirror line y=-x   Description: 8   1. I)   ii)reflection on line y=0   1. Area scale factor (−2)2 = 4   Area of object=  =3cm2 | |  | |
| 21 | 2. Area = | M 1  M 1  A 1  B 1  M 1  A 1  B 1  M 1 M1  A1 | |  | |
| 22 | Acceleration  When  Acceleration =   1. For minimum acceleration,      1. Velocity   Acceleration is minimum when t = 0.2 s   1. Distance = | M 1  M 1 A 1  M 1  A 1  M 1  A 1  M 1  M 1  A 1 | |  | |
| 23 | 1. Juma’s earnings before increase:   112% → 8400  100% → 8400 x 100/112=7500  Akinyi’s earnings before increase;  3/5X 7500  Increase in Akinyi’s earnings  = 14100 – 8400 – 4500  =1200  % increase in Akinyi’s earnings  =1200/4500 x 100  = 26 2/3 =26.67   1. No. of bags bought   = 14100/1175  = 12 bags  Profit = (1762.50 -1175)x12  = 7050  Ratio 5700 : 8400 = 19 :28  Profit for Akinyi : 7050 x 19/47 =2850  Total earning for Akinyi:  5700+2850= 8550 |  | |  | |
| 24 | 1. At turning points;     When  Point 1  When  Point 2        Gradient of normal,  At ,  Slope = | B 1  M 1  M 1  A 1  B 1  B 1  B 1  M 1  M 1  A 1 | |  | |