SUNRISE MATHEMATICS MARKING SCHEME 2021

|  |  |  |
| --- | --- | --- |
|  | 2 + = 2 hours  2 x 120 = 320 km  = 80 litres  80x59 = 4720 sh. | B1  M1  A1 |
|  |  | 03 |
|  |  | M1  M1  A1 |
|  |  | 03 |
|  | a)    b) | B1  B1  B1  B1 |
|  |  | 04 |
|  | 2x – 2  -2 – 1  -3 B1 for -3  3x + 1 < x + 11  2x < 10  X<5 B1 for x < 5  -3  Integral values -3,-2, -1, 0, 1,2,3,4 B1 – All correct integral values | B1  B1  B1 |
|  |  | 03 |
|  |  |  |
|  | √  √[]  = | M1  M1  A1 |
|  |  | 03 |
|  | ASF ==  LSF = √ =  VSF= ()3 = 8/27  Vol= x162  =48cm3 | M1  M1  A1 |
|  |  | 03 |
|  | 0.5 x14x8 sin θ=28m2  Sin θ=0.5  θ=Sin-1 (0.5)  Ө =30° | M1  A1 |
|  |  | 02 |
|  | Tuesday-Thursday=24x3=72hours  Monday=2400-0445=19hours 15minutes  Friday=18hours 45minutes  Total time=72+19.25+18.75=110hours  Time lost=0.5x110=55minutes  1845hrs-55minutes=1750hours  =5.50pm | B1  M1  A1 |
|  |  | 03 |
|  | N=9t2-25a2=(3t-5a)(3t+5a)  D=6t2+19at+15a2=6t2+9at+10at+15a2  =3t(2t+3a)+5a(2t+3a)  =(3t+5a)(2t+3a)  N=(3t-5a)(3t+5a)  D ( 3t+5a)(2t+3a)  =3t-5a  2t+3a | M1  M1  A1 |
|  |  | 03 |
|  |  | M1  M1  A1 |
|  |  | 03 |
| (a)  (b) | 11944 Sterling pounds | M1  A1  M1  A1 |
|  |  | 04 |
|  | Selling price =x 8000  =sh6400 | M1  M1  A1 |
|  |  | 03 |
|  | |  |  | | --- | --- | | *Log* | *No* | | *1.5649* | *36.72*  *(0.46)22*  *3.474 x 10-1*  *= 0.3474* | |  |
|  |  | 04 |
|  | Let the no. be | M1  M1  A1 |
|  |  | 03 |
|  | math pp1ms q16 | M1  M1  A1 |
|  |  | 03 |
|  | Sin 4y = Cos 2y  4y0 + 2y0 = 900  6y0 = 900 |  |
|  |  | 02 |
| (a)  (b)  (c) | Surface area of hemisphere=2π r2  S.A= 2xπ x1.52  14.14cm2  Surface area of cylindrical part  2π rh  S.A=2xπ xrxh  2  T.S.A=14.14+61.29  =75.43cm2  Volume of hemispherical part=2/3 πr3  =2/3xπx1.53  =7.071cm3  Volume of cylindrical part=πr 2 h  =πx1.52 x6.5  =45.96cm3  T. volume=7.069+45.96  =53.04cm3  Density=M/v  =10/53.04  =0.1886g/cm3 | M1  M1  M1  A1  M1  A1  M1  A1  M1  A1 |
|  |  | 10 |
| (a) (i)  (ii)  (iii)  (b)  (C)  (d) | **AB = b** - **a**  **OC** =  **BD = a - b**  **OX**=**b**(1-h)+  **OX**=**b**(1-h)+  **OX**=+  **a**h =  2 h = k  **b** k=**b** (1-h)  k=1 - h  (2 h)=1 - h  h =1 ═> h =  K=2() =  K =  ***a***+ | A1  A2  A1  A1  M1  M1  M1  A1  A1 |
|  |  | 10 |
| (a)  (b)  (c)  (d)  (e) |  | M1  A1  A1  M1  A1  M1  M1  A1  M1  A1 |
|  |  | B1  M1  M1  M1  M1  M1  M1  M1 A1 |
|  |  | 10 |
|  | Total ratio = 8+14+3=25  Material  Labour  Transport  2004  Material  Labours  Transport  Total in  = Sh 1890  In 2005 increased to 1981due to labour only | B1  B1  B1  M1  M1  A1  M1  M1  M1  A1 |
|  |  | 10 |
|  | (a) a =  2.75 =  t=  = 8 sec  (b) Distance = ½ x 8 x 22  = 88m  (c) 847 = ½ ( 40+t) + 32) x 22  847 = ½ (72 +t) x 22  1694 = (72+t) 22  = 72 + t  T = 5 sec  T = 40 +t = 40+5 = 45 sec.  (d) a = =  = -4.4m/s2 | M1  M1  A1  M1  A1  M1  M1 A1  M1  A1 |
|  |  | 10 |
|  | C:\Users\seceretaly\Documents\Scanned Documents\Image (25).jpg  A’(0,10)  B’(2,6) 3  C’(2,10)  A”(10,2)  B”(6,2) 3  C”(10,2)  ABC =2 | A1  A1 |
|  |  |  |
|  | (a)  C:\Users\Nzambia\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\73.jpg CF  2  9  12  16  22  25  (b) Median = L + i  = 43.5 + 8  = 43.5 +  = 43.5 + 1  C:\Users\Nzambia\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\74.jpg *= 44.5* |  |