**FORM 4 MATHS MARKING SCHEME**

|  |  |  |  |
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|  | No Log0.7841  0.1356½ =  Log 84.92 = 1.929   0.5310   | M1 M1 M1A1 | 🗸 logs🗸 oper |
|  | 1. Difference in longitude = 10 + 35 = 450

 | M1M1A1 |  |
| 3.  | a) | B1 |  |
|  | b) ∴(a, b) = (-6,8) | M1M1A1 |  |
|  | **x = y +** $\sqrt{x^{2}+ a^{2}}$x – y = $\sqrt{x^{2}+ a^{2}}$(x – y)2 x2 + a2(x – y)2 x2 = a2+ $\sqrt{\left(x-y+x\right)(x-y-x)}$ = a+ $\sqrt{\left(2x-y\right)\left(-y\right)}$ = a+ $\sqrt{(y^{2}- 2xy)}$ = a |  |  |
|  | $\left(\frac{2}{3}x+20\right)+\frac{5}{6}x+10^{0}=90$ $\frac{9}{6}x+30=90$ $\frac{9}{6}x=60^{0}$ X= 400=Tan $\left(x+20\right)$=Tan 60 | M1A1B1 |  |
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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2**CUBE** | 3 | 4 | 5 | 6 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |

a) i) P(6) = $\frac{4}{24}$ = $\frac{1}{6}$ ii) P(6 or 9) = $\frac{1}{4}$  P(6) = $\frac{4}{24}$  P(9) = $\frac{2}{24}$  $\frac{4}{24}$ + $\frac{2}{24}$  $\frac{6}{24}$ = $\frac{1}{4}$  | B1B1B1B1 |  |
| 7.  | (a) s = 83 – 5 x 82 + 3 x 8 + 4  512 – 320 + 24 + 4  = 220m (b) V = ds = 3t2 – 10t + 3  dt  = 3 x 102 – 10 x 10 + 3  300 – 100 +3 = 197m  |  |  |
| 8.  |   (x + 2 ) ( x – 5 ) = 60  x2 – 5x + 2x – 10 = 60  x2 – 3x – 70 = 0  x2 – 10x + 7x – 70 = 0  x ( x – 10) + 7(x – 10) = 0 ( x – 10) ( x +7) = 0  x = 10 x = -7  Length 10 + 2 = 12m  | M1M1A1 |  |
|  | Upper class limits 12.5, 15.5, 18.5, 21.5 24.5Cumulative frequency 3, 19 55, 86,100b) i) Median = 50th 18.2 ± 0.15 ii) Leaves below 13 =4 leavesleaves below 17 =35 leavesleaves between 13 and 17 = 35-4=31 | B1B1S1P1C1B1B1B1M1A1 | May be implied. |
|  |  |  |  |
|  |  (b) (b) (c)  Coordinates P¹¹ (2, 2) Q¹(-6,4) R¹¹ (0,6)(d) It an enlargement centre origin (0, 0) scale factor 2  B1 for triangles  |  |  |