

| Question Number | Scheme | Marks |
|-----------------|--|--------|
| 2(a) | $220 = (28 \times 10) - \frac{1}{2}a \times 10^2$ | M1 A1 |
| | Other possible equations, any 2 of which could be used to obtain an equation in a only : $28 = u + 10a$ $220 = \frac{(u + 28)}{2} \times 10$ $220 = 10u + \frac{1}{2}a \times 10^2$ $28^2 = u^2 + 2a \times 220$ | |
| | $a = 1.2 \text{ (m s}^{-2}\text{)}$ | A1 |
| | | (3) |
| 2(b) | Any ONE of these: $28 = u_4 + 1.2 \times 6 \Rightarrow u_4 = 20.8$ $28 = u_5 + 1.2 \times 5 \Rightarrow u_5 = 22$ $s_4 = 16 \times 4 + \frac{1}{2} \times 1.2 \times 4^2 = 73.6$ $s_5 = 16 \times 5 + \frac{1}{2} \times 1.2 \times 5^2 = 95$ Allow distances from Q e.g. $s_6 = 28 \times 6 - \frac{1}{2} \times 1.2 \times 6^2 = 146.4$ $s_5 = 28 \times 5 - \frac{1}{2} \times 1.2 \times 5^2 = 125$ | M1A1ft |
| | | |
| | e.g. $s = 20.8 \times 1 + \frac{1}{2} \times 1.2 \times 1^2$ OR $s = 22 \times 1 - \frac{1}{2} \times 1.2 \times 1^2$ OR $s = 95 - 73.6$ OR $22^2 = 20.8^2 + 2 \times 1.2s$ OR $s = 146.4 - 125$ | M1 |
| | 21.4 (m) Allow 21 (m). | A1 (4) |
| | | (7) |
| | Notes for question 2 | |
| | N.B. Use of an incorrect <i>suvat</i> formula is M0. | |
| 2(a) | M1 Complete method to find an equation in a only (note that $u = 16$) N.B. Allow $220 = (28 \times 10) + \frac{1}{2}a \times 10^2$ ($s = ut + \frac{1}{2}at^2$ for 'reverse' motion) leading to $a = -1.2$ M1A0A0 but if they then change a to 1.2, then it becomes M1A1A1 retrospectively) M0 if they assume $u = 0$ | |
| | A1 Correct equation | |