

| Q | Marking instructions | AO | Marks | Typical solution |
|-------|--|------|-------|-------------------------------|
| 15(a) | Uses gradient for $0 \leq t < 4$ to show given acceleration value. AG | 1.1b | B1 | $a = \frac{10 - -4}{4} = 3.5$ |
| | Subtotal | | 1 | |

| Q | Marking instructions | AO | Marks | Typical solution |
|-------|---|------|-------|--|
| 15(b) | Selects a suitable method for calculating the displacement by working out an appropriate area. or Uses a constant acceleration equation and substitutes appropriate values. | 3.1a | M1 | $100 = 16 + 7s$ $s = 12 \text{ m}$ <p>Since displacement = area</p> <p>When $t = 9$</p> $s = 12 + (9 - 4)10 = 62 \text{ m}$ |
| | Obtains a displacement of 12 when $t = 4$ or Obtains a displacement of $\frac{-16}{7}$ when $t = \frac{8}{7}$ Allow area of triangle = $\frac{16}{7}$ or Obtains a displacement of $\frac{100}{7}$ from $t = \frac{8}{7}$ to $t = 4$ or Obtains a displacement of $\frac{450}{7}$ from $t = \frac{8}{7}$ to $t = 9$ OE | 1.1b | A1 | |
| | Completes reasoned argument with fully correct working to show the given displacement. Do not award if decimal values are repeatedly used throughout to only one decimal place. AG | 2.1 | R1 | |
| | Subtotal | | 3 | |

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|--|-------------------|--|---|--|
| | Question 15 Total | | 4 | |
|--|-------------------|--|---|--|