

National 5 Physics
Dynamics
Check Test 5: Solutions

1. A

2. E

3. C

4. A

5. C

6. D

7. C

8. B

9. C

10. C

11. (a) $a = \frac{v_v - u_v}{t}$ (1)

$$1.6 = \frac{v_v - 0}{1.2} \quad (1)$$

$$v_v = 1.9 \text{ ms}^{-1} \quad (1)$$

(b) 1.2 s (1)

12. (a) (i) $d = v_h t$ (1)

$$= 2 \times 0.75 \quad (1)$$

$$= 1.5 \text{ m} \quad (1)$$

(ii) $a = \frac{v_v - u_v}{t}$ (1)

$$9.8 = \frac{v_v - 0}{0.75} \quad (1)$$

$$v_v = 7.4 \text{ ms}^{-1} \quad (1)$$

(b) The same horizontal speed. (1)

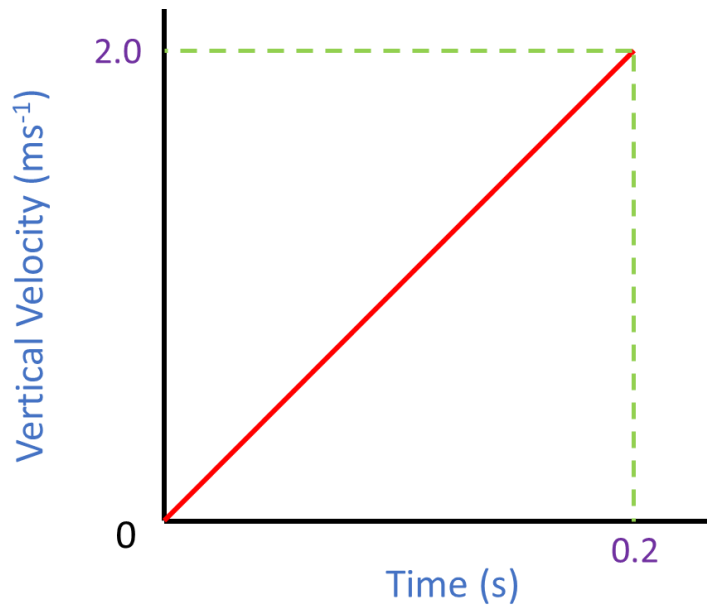
Mass does not affect the horizontal distance travelled. (1)

13. (a) $a = \frac{v_v - u_v}{t}$ (1)

$$9.8 = \frac{v_v - 0}{0.2} \quad (1)$$

$$v_v = 2.0 \text{ ms}^{-1} \quad (1)$$

(b)



1 mark for correct shape

1 mark for correct labels & axes

(c) vertical drop = area under $v_v - t$ graph (1)

$$= \left(\frac{1}{2} \times b \times h \right)$$

$$= \left(\frac{1}{2} \times 0.2 \times 2.0 \right) \quad (1)$$

$$= 0.2 \text{ m} \quad (1)$$