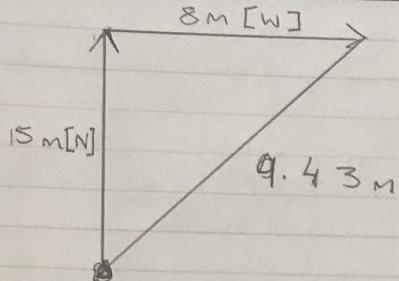


*Priority*  
CORRESPONDENCE/NOTES

1.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 15^2 + 8^2 &= c^2 \\
 225 + 64 &= c^2 \\
 289 &= c^2 \\
 \sqrt{289} &= c \\
 17 &= c
 \end{aligned}$$

2.

9.  $\frac{a}{v_i} = 0 \text{ m/s}$

$$V_f = 270 \text{ km/h} = 75 \text{ m/s}$$

$$t = 12.1 \text{ s}$$

$$a = ?$$

$$V_f = V_i + at$$

$$75 = 0 + a(12.1)$$

$$\frac{75}{12.1} = \frac{12.1 a}{12.1}$$

$$6.20 = a$$

c

$$V_i = 0 \text{ m/s}$$

$$V_f = 270 \text{ km/h} = 75 \text{ m/s}$$

$$t = 12.1 \text{ s}$$

$$d = ?$$

b

$$V_i = 0 \text{ m/s}$$

$$V_f = 100 \text{ km/h} = 27.78 \text{ m/s}$$

$$a = 6.20 \text{ m/s}$$

$$t = ?$$

$$V_f = V_i + at$$

$$27.78 = 0 + 6.2(t)$$

$$27.78 = \frac{6.2t}{6.2}$$

$$4.483 = t$$

continued on next page

Over

Priority  
CORRESPONDENCE/NOTES

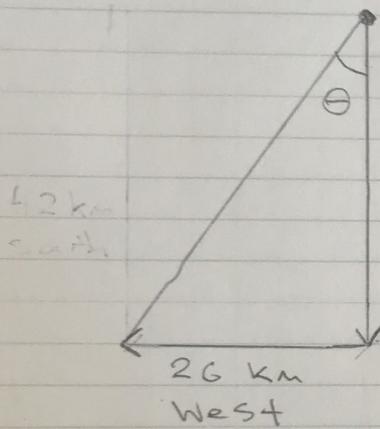
$$d = \left( \frac{v_i + v_f}{2} \right) t$$

$$d = \left( \frac{0 + 75}{2} \right)$$

$$d = 37.5 (12.1)$$

$$d = 453.75 \text{ m}$$

10.



$$a^2 + b^2 = c^2$$

$$42^2 + 26^2 = c^2$$

$$1764 + 676 = c^2$$

$$\sqrt{2440} = c$$

$$49.40 = c$$

opposite  
adjacent

b)

$$\sin \theta = \frac{26}{42}$$

$$\sin \theta = 0.61904761904$$

$$\theta = 38.25^\circ$$

South  $38.25^\circ$  West

Over

*Priority*  
CORRESPONDENCE/NOTES

10.

c)  $v = d/t$

$$v = \frac{49.4}{3}$$

$$v = 16.47 \text{ km/h}$$

Over

11.

- a) the object had uniform acceleration from 0s to 10s. Then it had uniform velocity of 6m/s until 25s.
- b) the motions are similar because they both have constant velocity. the velocity is greater from 10s to 25s (6m/s) than 40s to 60s (2m/s)
- c) 6m/s

$$d) m = \frac{y_2 - y_1}{x_2 - x_1} \quad (0, 1) \\ (10, 6)$$

$$m = \frac{1 - 6}{0 - 10}$$

$$m = \frac{-5}{-4}$$

$$m = \frac{5}{4}$$

$$m = 1.25 \text{ m/s}^2$$

$$a = 1.25 \text{ m/s}^2$$

$$e) d = \left( \frac{v_i + v_f}{2} \right) t \quad t = 25 - 10 \\ = 15 \text{ s}$$

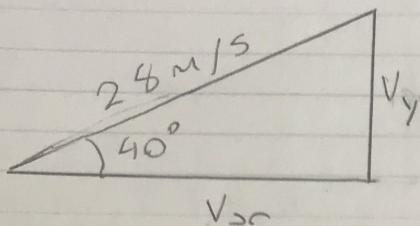
$$d = 6(15)$$

$$d = 90 \text{ m}$$

Over

*Priority*  
CORRESPONDENCE/NOTES

12.



$$V_x = 28 \times \cos 40^\circ \\ = 21.45 \text{ m/s}$$

$$V_y = 28 \times \sin 40^\circ \\ = 18.00 \text{ m/s}$$

Knowns

$$V_i = 18 \text{ m/s}$$

$$t = ?$$

$$a = -9.8 \text{ m/s}^2$$

$$d = V_i t + \frac{1}{2} a t^2$$

c)  $V_i = 28 \text{ m/s}$

$$V_f = 0 \text{ m/s}$$

$$\vec{a} = -9.8 \text{ m/s}^2$$

$$V_f^2 = V_i^2 + 2ad$$

$$0^2 = 28^2 + 2(-9.8)d$$

$$0 = 784 + (-19.6)d$$

$$\frac{784}{-19.6} = \frac{-19.6d}{-19.6}$$

$$38.47 = d$$

Over

*Priority*  
CORRESPONDENCE/NOTES

12.

b)

$$V_i = 18 \text{ m/s}$$

$$d = ?$$

$$a = -9.8 \text{ m/s}^2$$

$$V_f = 0 \text{ m/s}$$

$$V_f^2 = V_i^2 + 2ad$$

$$0^2 = 18^2 + 2(-9.8)d$$

$$0 = 324 + (-19.6)d$$

$$\frac{324}{19.6} = \frac{19.6d}{19.6}$$

$$16.53 \text{ m} = d$$

$$a) t = \frac{V_i}{a}$$

$$t = \frac{28}{9.8}$$

$$t = 2.8571425$$

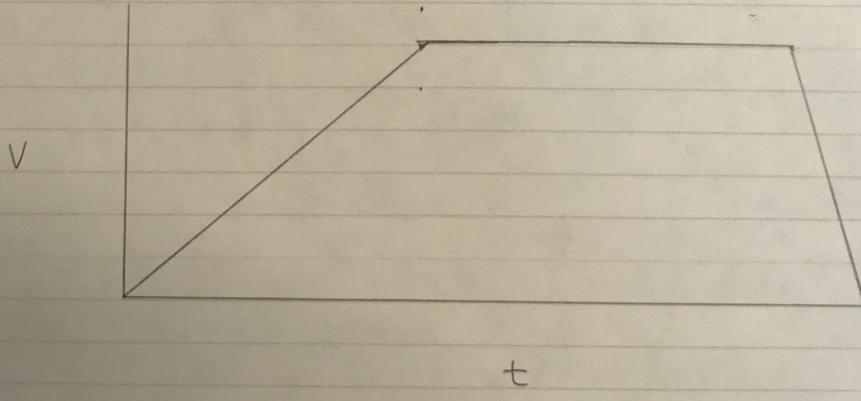
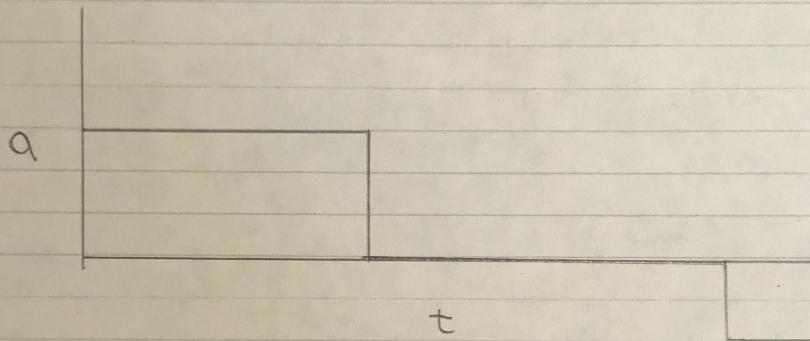
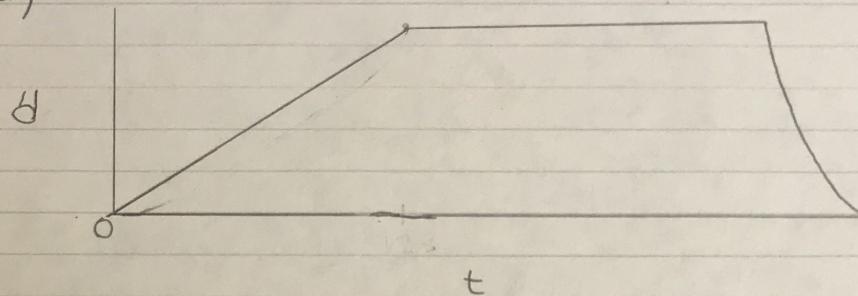
$$t_{\text{total}} = 2(t)$$

$$t_{\text{total}} = 2(2.8571425) \\ = 5.71$$

Over

*Priority*  
CORRESPONDENCE/NOTES

13. a)



Over