

Name: KEY

TA: \_\_\_\_\_

Some helpful equations:

$$\Delta x = x_2 - x_1 \quad v = \frac{\Delta x}{\Delta t} = \frac{x_2 - x_1}{t_2 - t_1}$$

You walk 75.0m at a speed of 1.50m/s, and then run 75.0m at a speed of 3.00m/s, along a straight track.

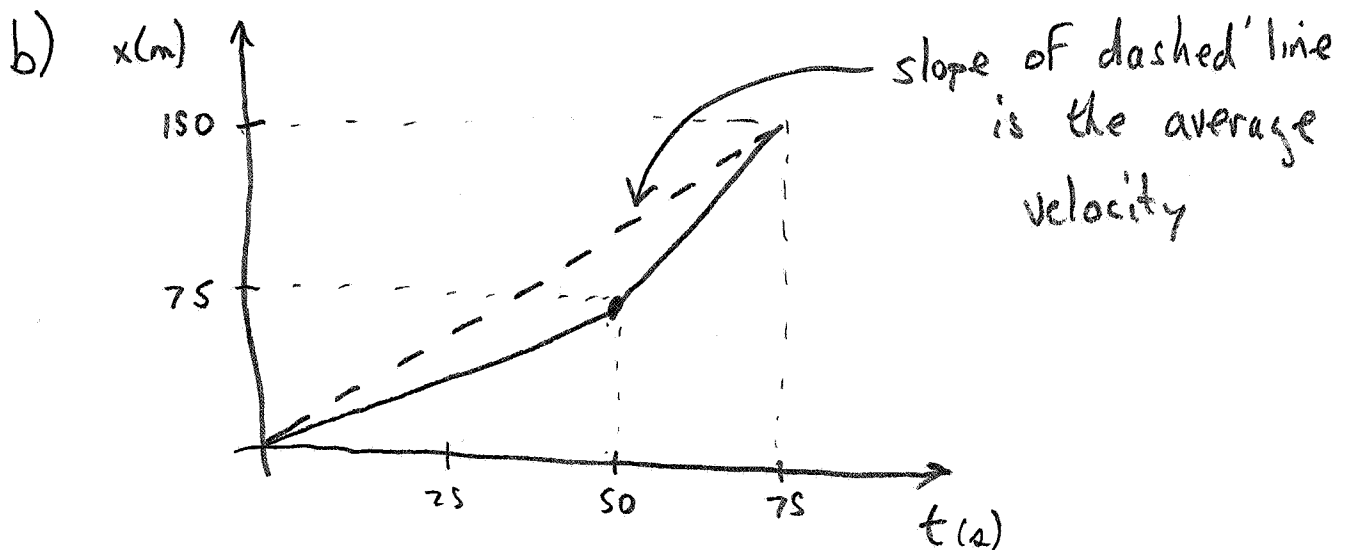
- a) Calculate your average velocity, showing all of your work. (10pts)  
 b) Plot  $x$  versus  $t$  for the whole path and indicate how the average velocity is determined from this graph. (10pts)

a) First part  $v_1 = \frac{\Delta x_1}{\Delta t_1}$        $\Delta t_1 = \frac{\Delta x_1}{v_1} = \frac{75.0m}{1.5m/s} = 50s$

Second part  $v_2 = \frac{\Delta x_2}{\Delta t_2}$        $\Delta t_2 = \frac{\Delta x_2}{v_2} = \frac{75.0}{3.00m/s} = 25s$

total time = 75s

$$\Delta v_{\text{avg}} = \frac{\Delta x}{\Delta t} = \frac{150m}{75s} = 2.00m/s$$



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