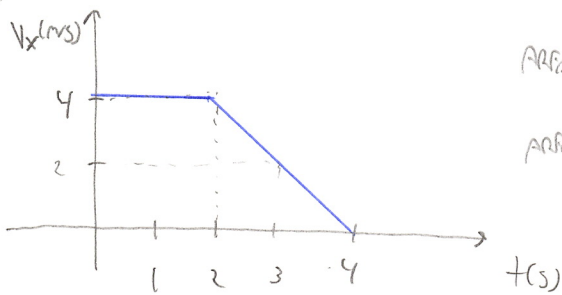


P2.34



AREA $\left(\begin{matrix} X(t) \\ v_x(t) \end{matrix} \right) \rightarrow$ SCOPE
 AREA $\left(\begin{matrix} v_x(t) \\ a_x(t) \end{matrix} \right) \rightarrow$ SCOPE

a) @ t = 1 s

AREA = ΔX

$(1)(4) = X_f - X_i$

$X_f = 4 \text{ m}$

$v_x \rightarrow$ READ OFF GRAPH.

$v_x = 4 \text{ m/s}$

$a_x =$ SLOPE

$a_x = 0 \text{ m/s}^2$

b) @ t = 3 s

AREA = ΔX

$(2)(4) + \frac{1}{2}(4-2)(4) - \frac{1}{2}(4-3)(2) = X_f - X_i$

$8 + 4 - 1 = X_f$

$X_f = 11 \text{ m}$

$v_x \rightarrow$ READ OFF GRAPH.

$v_x = 2 \text{ m/s}$

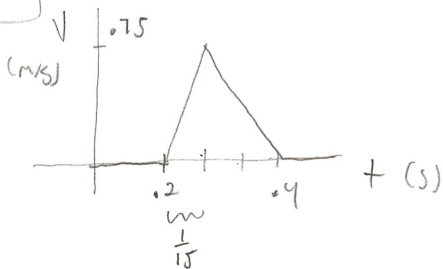
$a_x =$ SLOPE

$a_x = \frac{\Delta v_x}{\Delta t}$

$= \frac{0 - 4}{4 - 2}$

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

P2.22



$\frac{0.4 - 0.2}{3} = \frac{1}{15}$

$|a| = \left| \frac{0 - 0.75}{(\frac{2}{15})} \right|$

$|a| = |-5.625| \text{ m/s}^2$

$|a| = 5.6 \text{ m/s}^2$

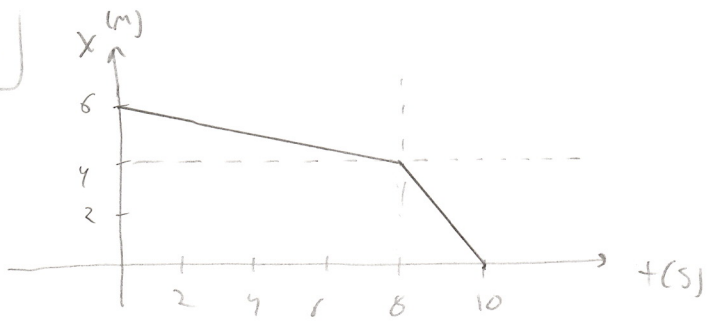
SPEEDS UP PHASE

$|a| = \left| \frac{0.75 - 0}{(0.2 + \frac{1}{15} - 0.2)} \right|$

$|a| = 11.25 \text{ m/s}^2$

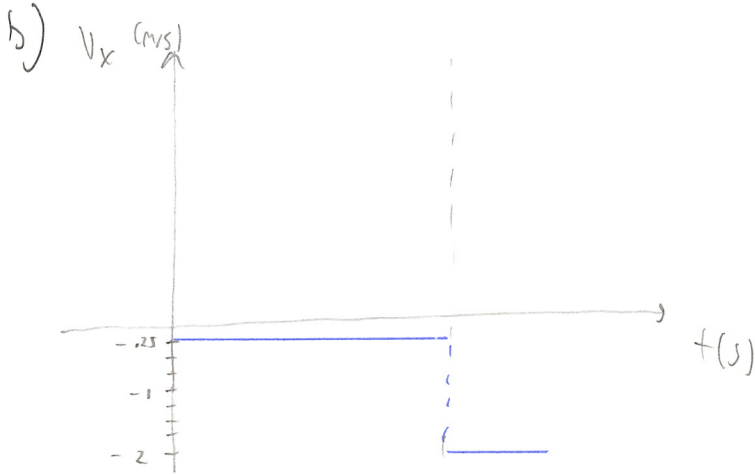
$|a| = 11 \text{ m/s}^2$

P2.3



a) SLOW SPEED \rightarrow LEAST STEEP SLOPE

$$\Delta t = 8 \text{ SEC}$$



$$0 \rightarrow 8 \text{ SEC}$$

$$v_x = \frac{4-6}{8-0}$$

$$v_x = -0.25 \text{ m/s}$$

$$8 \rightarrow 10 \text{ SEC}$$

$$v_x = \frac{0-4}{10-8}$$

$$v_x = -2 \text{ m/s}$$