

$$2/30 \quad 0 < t < 4 \text{ s} : a = -3t/4$$

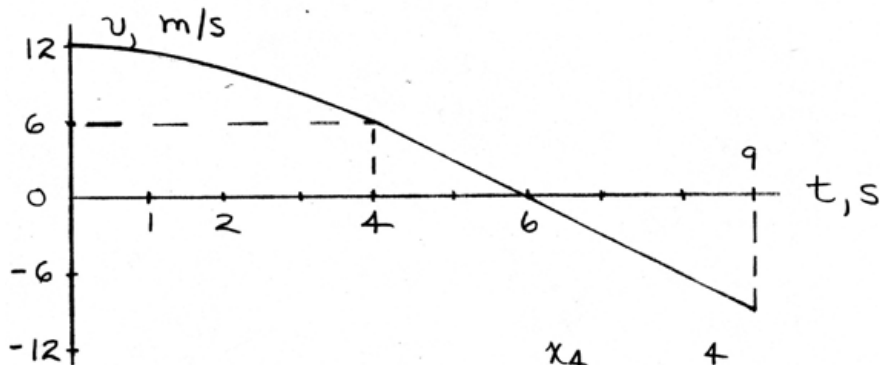
$$a = \frac{dv}{dt} : \int_{12}^v dv = - \int_0^t \frac{3t}{4} dt$$

$$v = 12 - \frac{3}{8}t^2, \quad v_4 = 6 \text{ m/s}$$

$$4 < t < 9 \text{ s} : a = -3 \text{ m/s}^2 = \text{constant}$$

$$v = v_4 + a \Delta t = 6 - 3(t-4) = 18 - 3t$$

$$v_9 = -9 \text{ m/s}$$



$$0 < t < 4 \text{ s} : dx = v dt : \int_0^{x_4} dx = \int_0^4 (12 - \frac{3}{8}t^2) dt$$

$$s_4 = 40 \text{ m}$$

$$4 < t < 9 \text{ s} : x_6 - x_4 = \int_4^6 v dt = \frac{1}{2}(6-4)6 = 6 \text{ m}$$

$$\therefore \Delta x = 40 + 6 = \underline{46 \text{ m}}$$