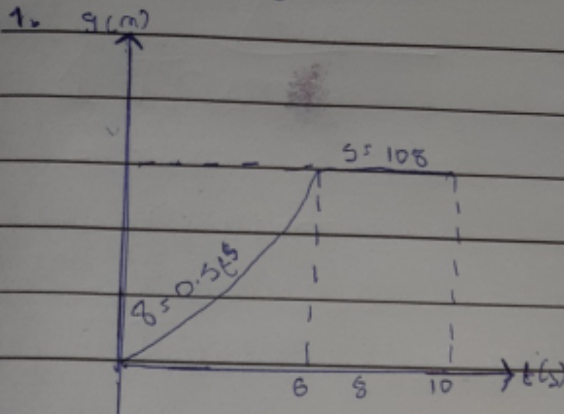


Izhan Abokh Joseph

18/ENG03/033

Civil Engineering



$$v = \frac{ds}{dt}$$

$$v = 1.5t^2$$

$$\text{at } t = 6s$$

$$v = 1.5 \times 6^2$$

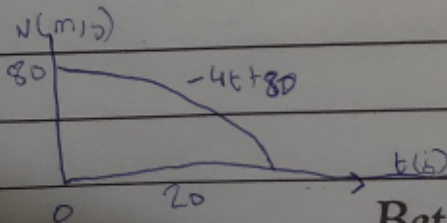
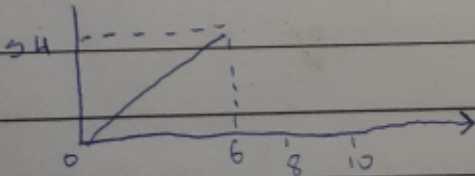
$$= 1.5 \times 36$$

$$v = 54 \text{ m/s}$$

From $t = 6s - 10s$, $s = 108$

$$\therefore v = 0$$

$v-t$ Graph



$$1) s = \int v dt$$

$$s = \int (-4t + 80)$$

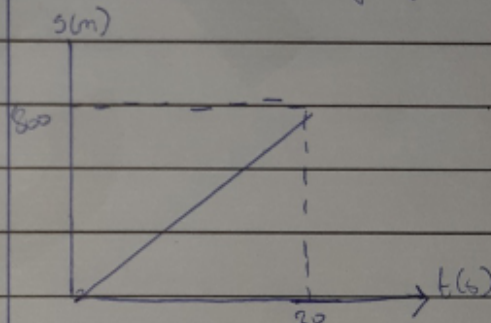
$$s = -2t^2 + 80t$$

at $t = 20s$

$$s = -2(20)^2 + 80(20)$$

$$s = 1600 - 800 = 800 \text{ cm}$$

$s(m)$ $s-d$ Graph



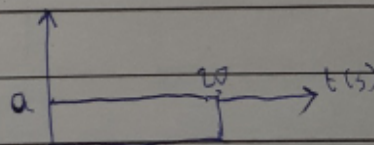
ii) acceleration

$$a = \frac{dv}{dt}$$

$$\therefore a = -4 \text{ m/s}^2$$

$$\text{at } t = 20, a = -4 \text{ m/s}^2$$

$a-t$ Graph
 $a(m/s^2)$

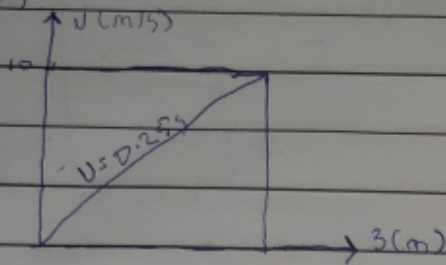


3)

Beta Don Come...!



3)



$$a = \left(\frac{dv}{dt}\right) v$$

$$v = 0.25t$$

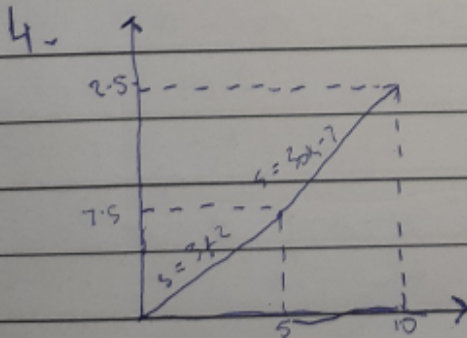
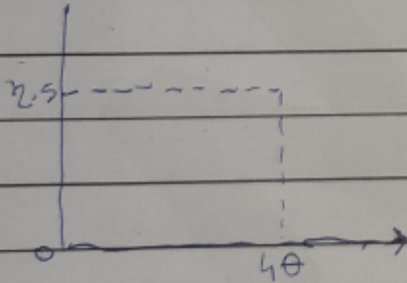
$$a = 10 \times (0.25) \text{ m/s}^2$$

$$a = 10 \times 0.25$$

$$a = 2.5 \text{ m/s}^2$$

a-t graph

$$a (\text{m/s}^2)$$



i) $v = \frac{ds}{dt}$

at $t = 5s$

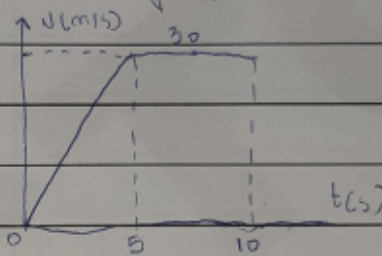
$$v = 6t = 6 \times 5$$

$$= 30 \text{ m/s}$$

at $t = 10s$

$$v = 30 \text{ m/s}$$

v-t graph



ii) $a = \frac{dv}{dt}$

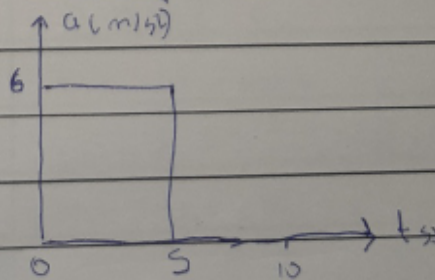
at $t = 5$

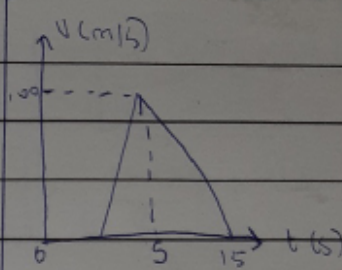
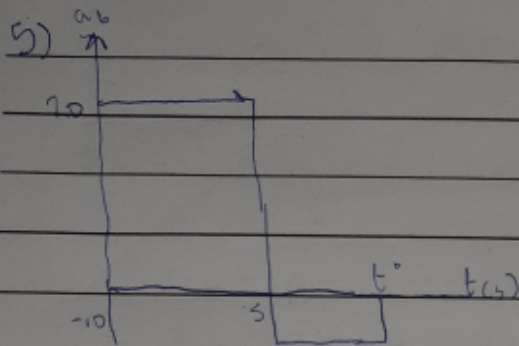
$$a = 6 \text{ m/s}^2$$

at $t = 10s$

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

a-t graph





$$i) v = \int a dt$$

$$v = \int 20 dt$$

$$v = 20t$$

$$\text{at } t = 5$$

$$v = 20 \times 5 = 100 \text{ m/s}$$

$$5 \leq t \leq t'$$

$$\int_{100}^v du = \int_0^{t'} -10 dt$$

$$v - 100 = -10t' + 10 \times 5$$

$$v - 100 = -10t' + 50$$

$$v - 100 = -10t' + 50$$

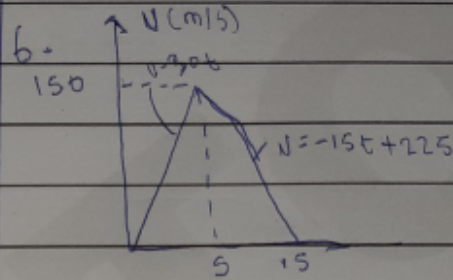
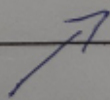
$$\text{at } t', v = 0$$

$$0 - 100 = -10t' + 50$$

$$10t' = 150$$

$$t' = 15$$

v-t graph



$$0 \leq t \leq 5$$

$$v = 30t$$

$$\int_0^5 ds = \int_0^5 30t dt$$

$$s = 15t^2/2$$

$$s = 15(5)^2 - 15(0)^2$$

$$s = 15 \times 25$$

$$s = 375 \text{ m}$$

$$s = 375 \text{ m}$$

$$5 \leq t \leq 15$$

$$v = -15t + 225$$

$$\int_{375}^s ds = \int_5^{15} (-15t + 225) dt$$

$$s - 375 = \left. \frac{-15t^2}{2} + 225t \right|_5^{15}$$



$$8 - 375 \left[\frac{-15(15^2) + 225(15)}{2} \right] = \left[\frac{-15(5)^2 + 225(5)}{2} \right]$$

$$5 - 375 \left[\frac{-15 \times 225 + 3375}{2} \right] = \left[\frac{15 \times 25 + 1125}{2} \right]$$

$$5 - 375 = (-1687.5 + 3375) - (-187.5 + 1125)$$

$$5 - 375 = +1687.5 - 937.5$$

$$5 - 375 = 750$$

$$5 = 1125 \text{ m}_x$$