

$$V - 100 = -10(t - 5)$$

$$V - 100 = -10t + 50$$

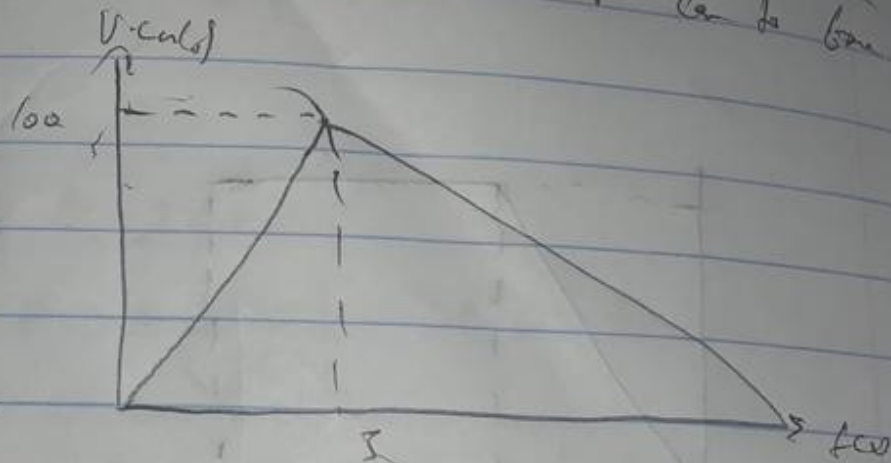
$$V = (-10t + 150) \text{ m/s}$$

$$\textcircled{a} \cdot v = 0$$

$$0 = -10t + 150$$

$$150 = 10t$$

$$t = 15 \text{ s} \quad \text{--- [for } t \text{ to } 15 \text{ s } \text{ and } t > 15 \text{ s } \text{]}$$



$$\textcircled{a} \cdot v = 30 \text{ m/s}$$

$$s = \int_0^t (15t^2) dt$$

$$\textcircled{a} t = 5$$

$$= 15 \cdot (5)^2$$

$$= 37.5 \text{ m}$$

$$v = 15t^2 = 20$$

$$s = \int_0^t (15t^2) dt$$

$$\textcircled{a} t = 15.5 \text{ s}$$

$$\textcircled{a} t = 10$$

$$= 7.5 (10)^2 = 750 \text{ m}$$

$$= 1500 \text{ m}$$

total distance travelled

$$= 37.5 + 1500 = 1537.5 \text{ m}$$

4

$$s = 3t^2$$

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

$$6t$$

$$s = 30t - 7s$$

$$dv = \frac{ds}{dt} = 30 \text{ m/s}$$

$$a = 25$$

$$v_1 = 6 \cdot (5) = 30 \text{ m/s}$$

$$v_2 = 30 \text{ m/s}$$

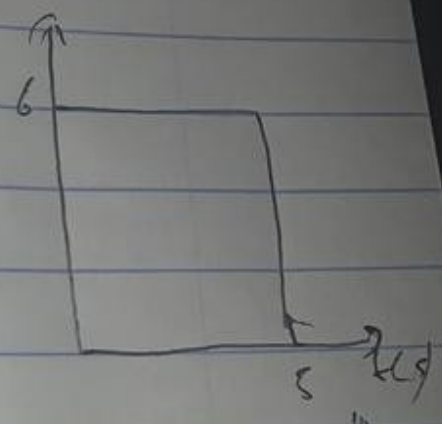
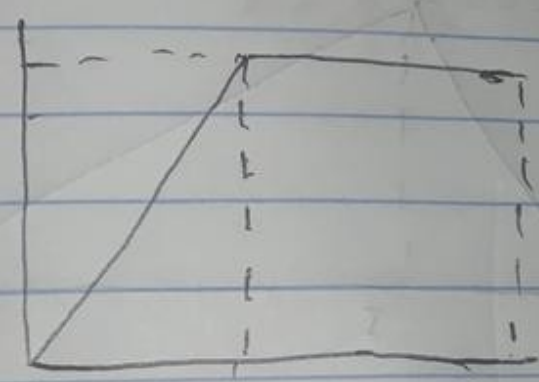
$$a = \frac{dv}{dt}$$

$$v = 6t$$

$$v = 30 \text{ m/s}^2$$

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

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



5)

$$a = 20 \text{ m/s}^2 \quad a = 10 \text{ m/s}^2$$

$$s = \int v \cdot dt$$

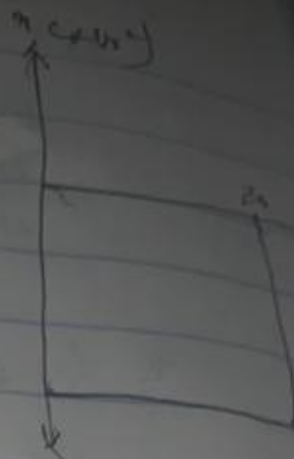
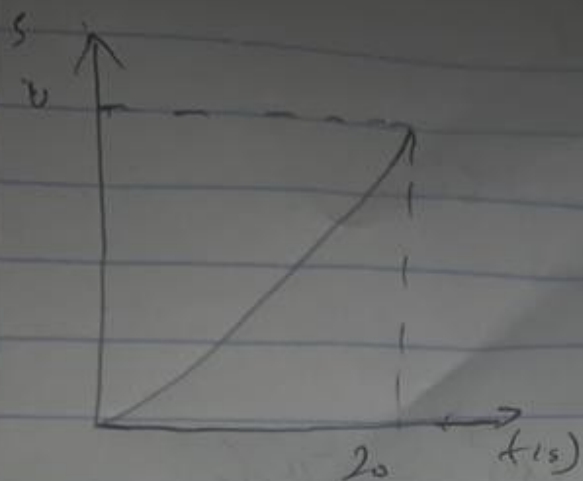
$$s_0 = \int v_0 = \int 20 \cdot dt$$

$$v = 20t$$

$$t = 5$$

$$v = 100 \text{ m/s}$$

$$\int_{100}^v dv = \int 10 \cdot dt$$



s-t graph

3) $v = 0.25s$

$$a = v \left(\frac{dv}{ds} \right) \quad a = 0.25s (0.25)$$

$$a = (0.0625s) \text{ m/s}^2$$

$$a = 400 \text{ m}$$

$$a = (0.0625 \cdot 400)$$

$$a = 25 \text{ m/s}^2$$

$$a (m/s^2)$$

$$2.5$$



Area Major
 est Because Loop
 Bleed (Bleed

$$1) \quad S = 0.5t^2$$

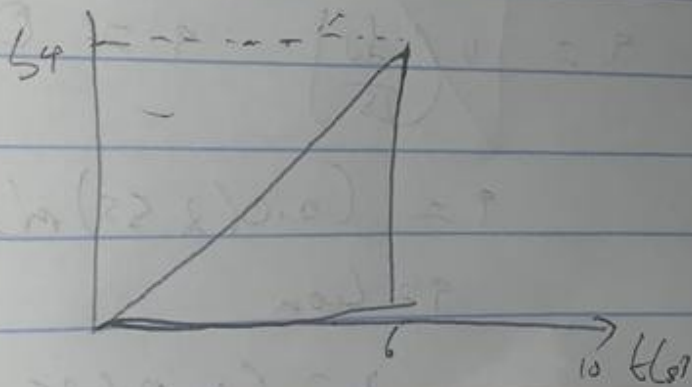
$$v = \frac{ds}{dt} = 1.5t$$

$$t = 6$$

$$v = 1.5(6) = 9 \text{ m/s}$$

$$s = 0.5(6)^2 = 18 \text{ m}$$

$$v = \frac{ds}{dt} ; v = 0 \text{ m/s}$$



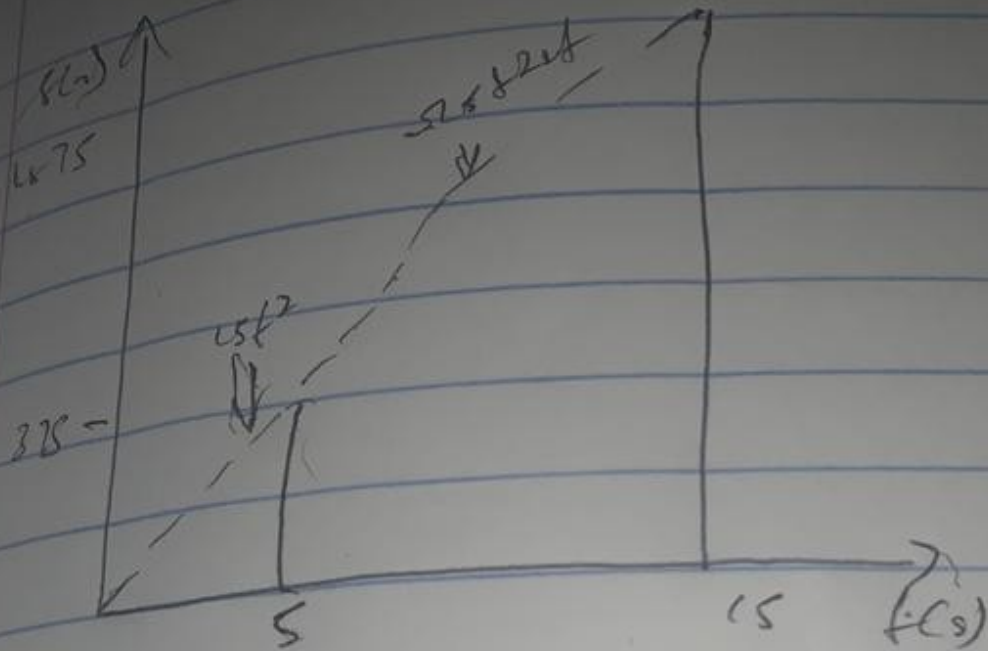
$$2) \quad v = 4t + 80$$

$$a = \frac{dv}{dt} = 4 \text{ m/s}^2 ; t = 20 \quad 92 \text{ m/s}^2$$

$$s = 5t^2 + (-2t^2 + 80t)$$

$$s = (-2(20)^2 + 80(20)) - (-2(0)^2 + 80(0))$$

$$s = 800 \text{ m}$$



s-t graph