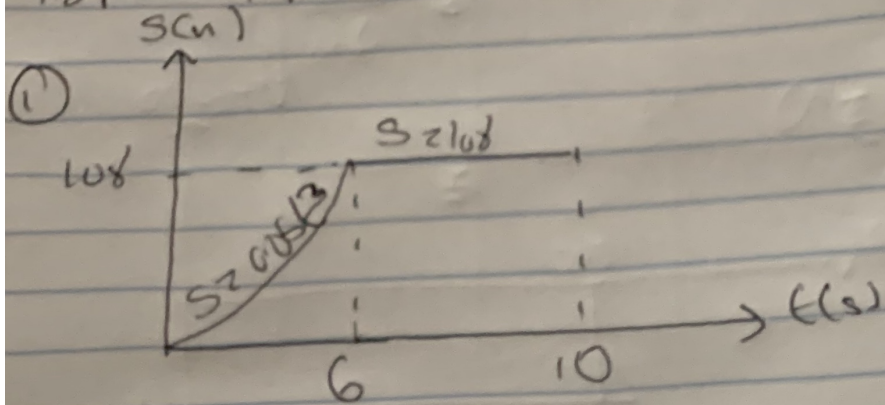


Kaly-Umeh David
Elect/Elect
18/EN/904/1047



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

$$V = 1.5t^2$$

at $t = 6s$

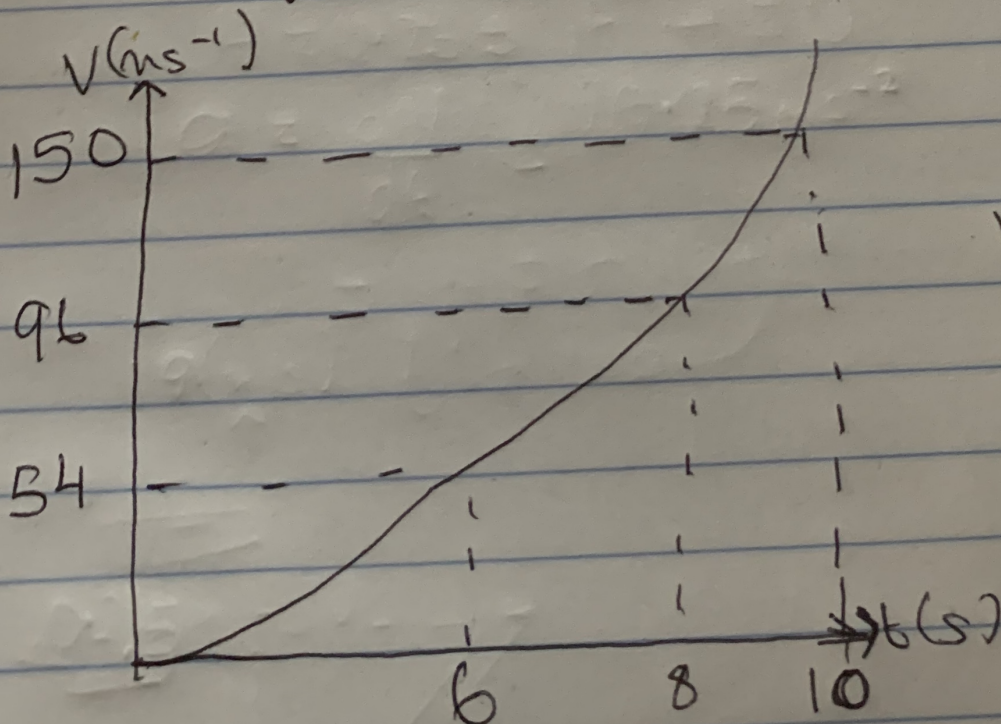
$$V = 1.5 \times 36 = 54 \text{ms}^{-1}$$

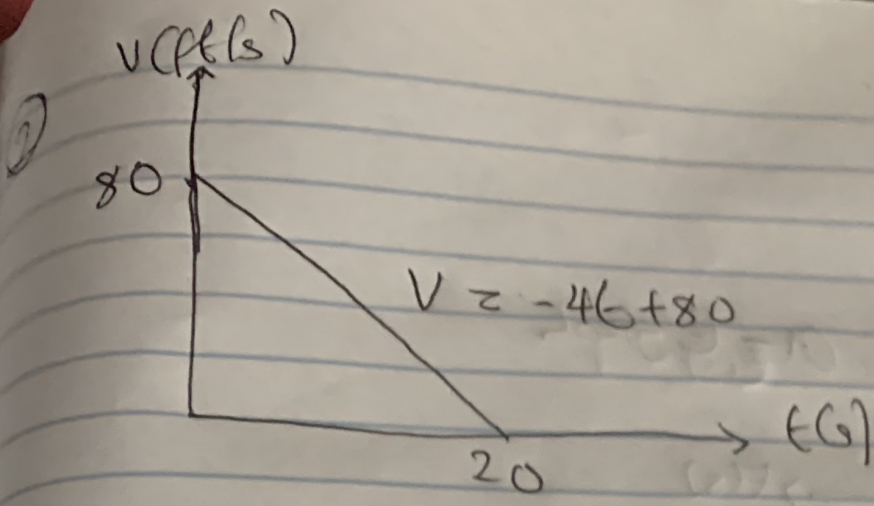
at $t = 8s$

$$V = 1.5 \times 64 = 96 \text{ms}^{-1}$$

at $t = 10s$

$$V = 1.5 \times 100 = 150 \text{ms}^{-1}$$





$$S = \int V dt$$

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

$$= \frac{-4t^2}{2} + 80t$$

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

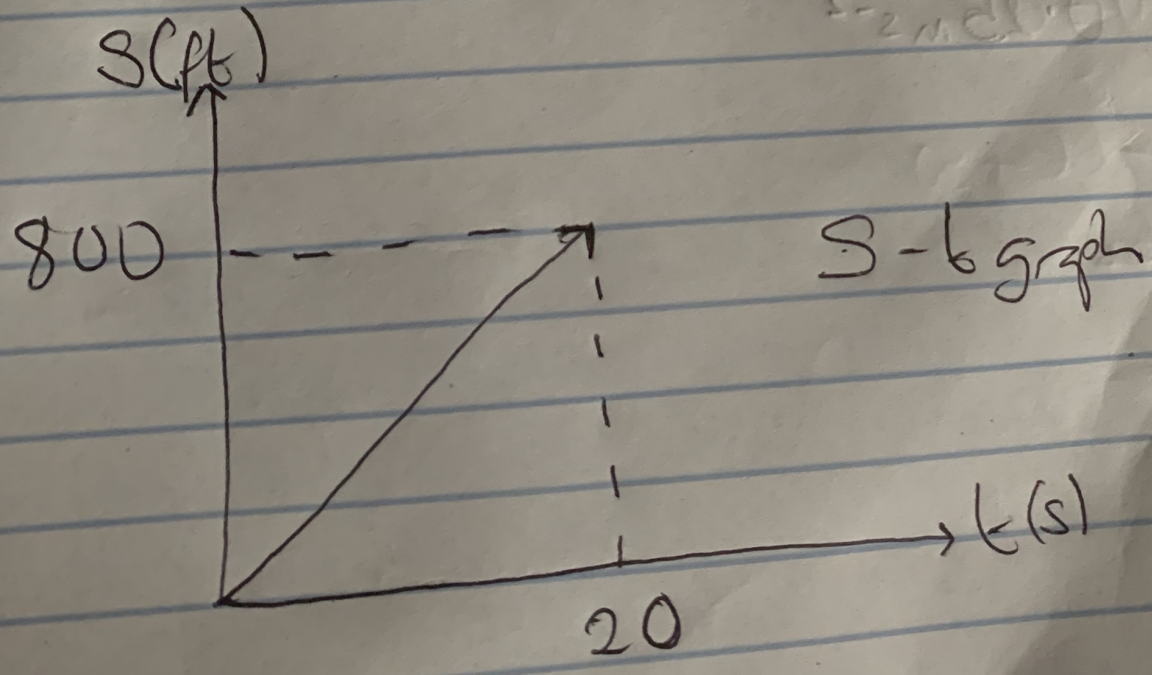
at $t=20$ and $t=0$

$$S = 0$$

at $t=20$

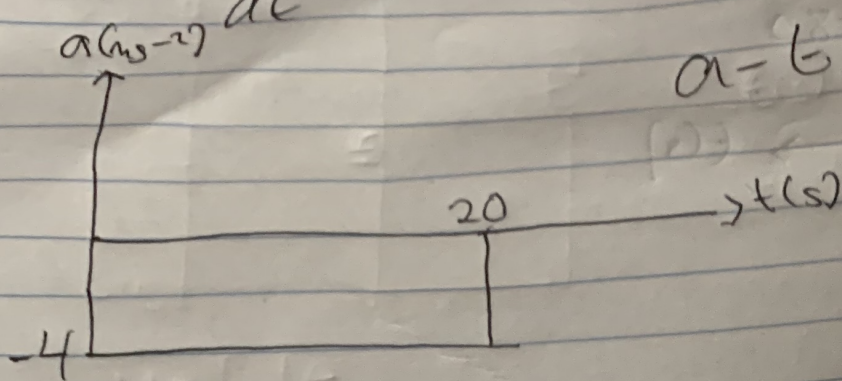
$$S = -2(20)^2 + 80(20)$$

$$S = -800 + 1600 = 800 \text{ m}$$



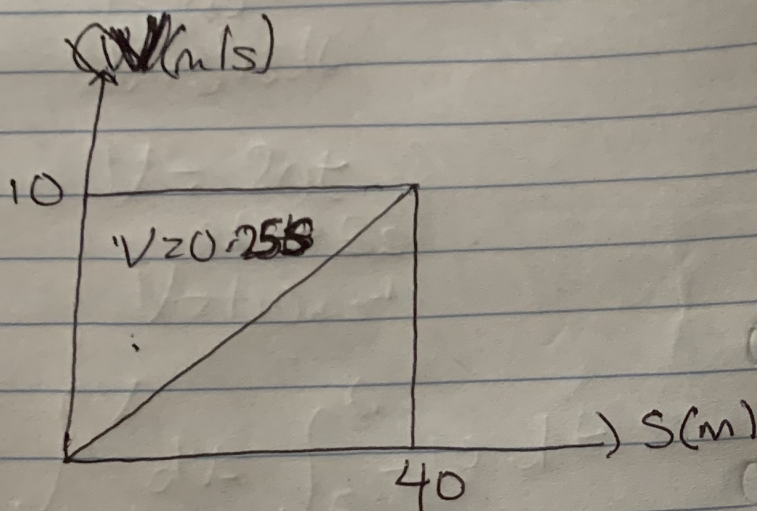
$$V = -4t + 80$$

$$a = \frac{dV}{dt} = -4$$



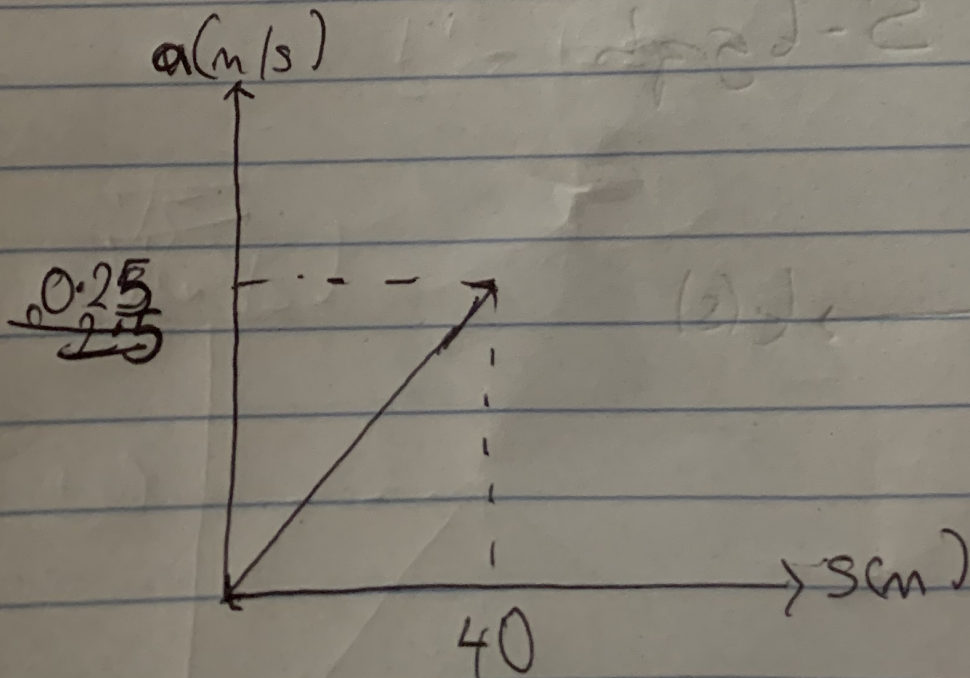
a - 6 graphs

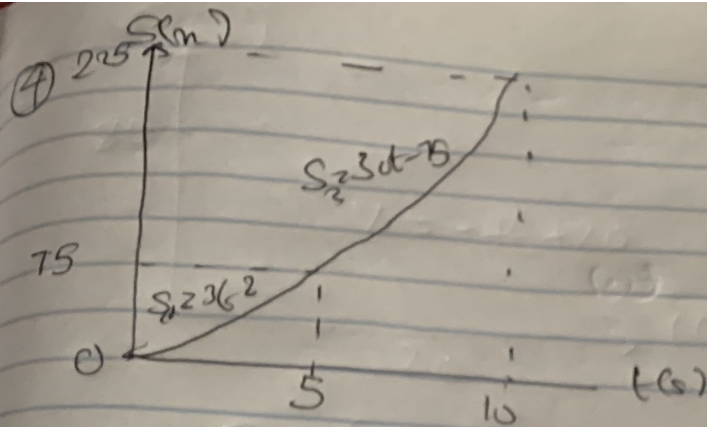
③



$$V = 0.25S$$

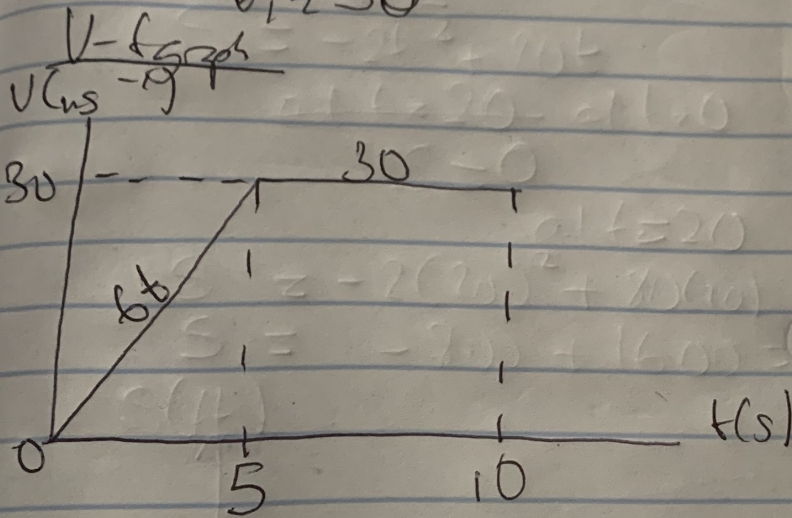
$$a = \frac{dV}{dS} = 0.25 \text{ m s}^{-2}$$





$$V_1 = \frac{dS_1}{dt} = 6t \quad V_2 = \frac{dS_2}{dt} = 30$$

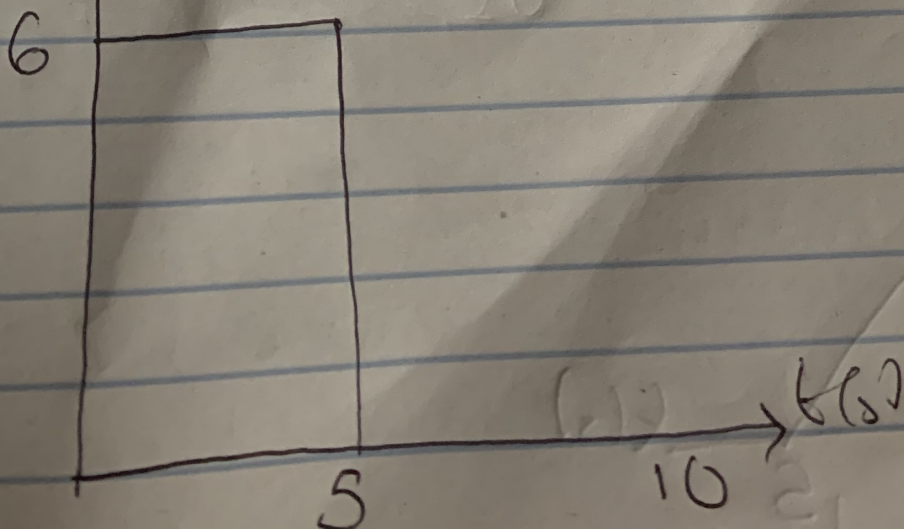
at $t=5$
 $V_1 = 30$



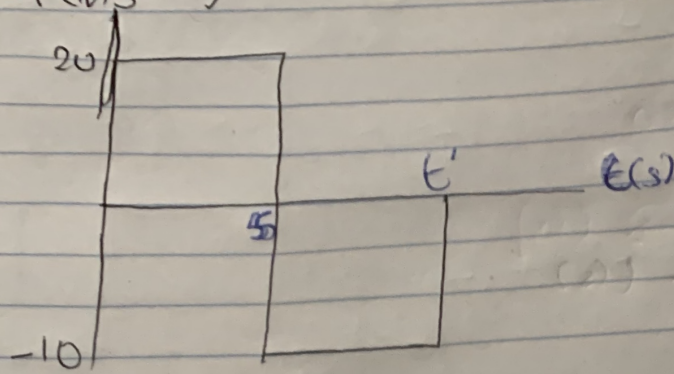
(ii) $a = \frac{dV}{dt}$

$$a_1 = 6 \text{ ms}^{-2}$$

$$a_2 = 0 \text{ ms}^{-2}$$



5) $a \text{ (ms}^{-2}\text{)}$



$$V = \int a dt$$
$$V = \int 20 dt$$

$$V = 20t$$

at $t = 5\text{s}$
 $V = 100\text{ms}^{-1}$

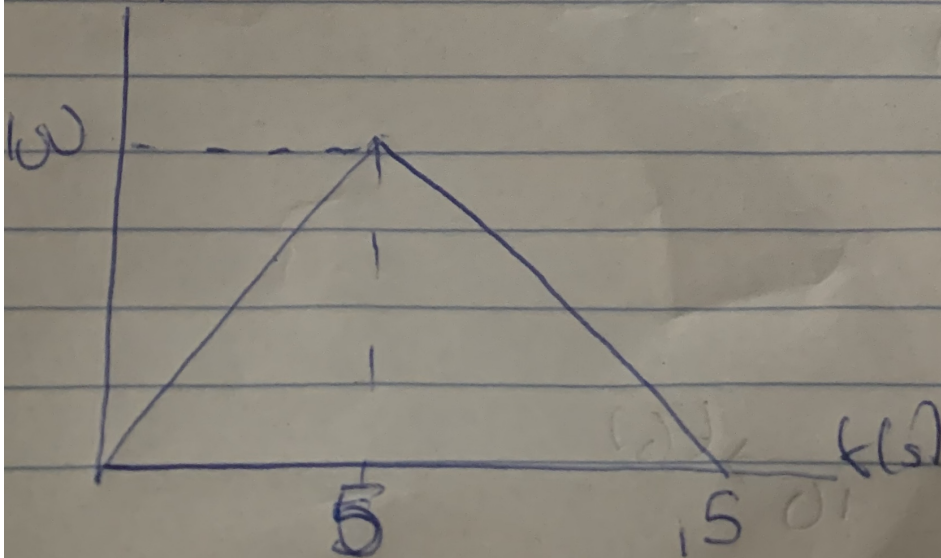
$$\int_{100}^V dv = \int_5^{t'} -10 dt$$

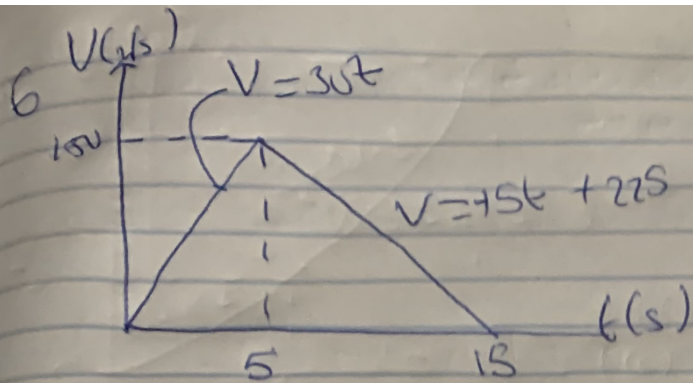
$$V - 100 = -10t' + 50$$

at $t', V = 0$

$$0 - 100 = -10t' + 50$$
$$t' = 15\text{s}$$

~~$V = t$~~
 $V \text{ (m/s)}$





$$V = 30t$$

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

$$s = 15t^2 \Big|_0^5$$

$$= 375 \text{ m}$$

$$V = 15t + 225$$

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

$$s - 375 = \frac{-15t^2}{2} + 225t$$

~~$$s - 375 = \left(\frac{-15(15)^2}{2} + 225(15) \right)$$~~

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

$$s - 375 = 1687.5 - 937.5$$

$$s - 375 = 750$$

$$s = 1125 \text{ m}$$

