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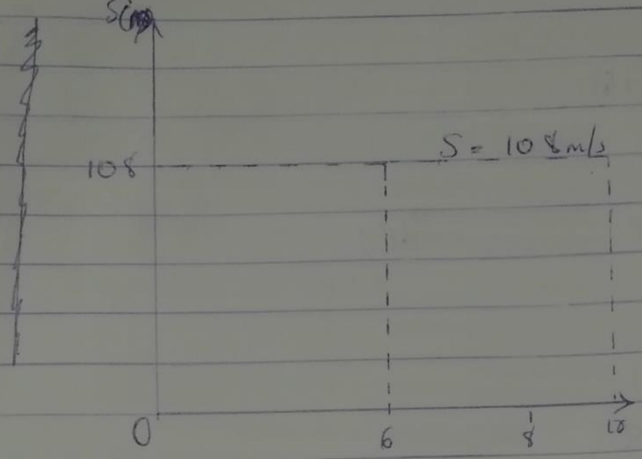


$V = \frac{ds}{dt}$

$V = 1.5t^2$

at $t = 6s$

$V = 1.5 \times 6^2$

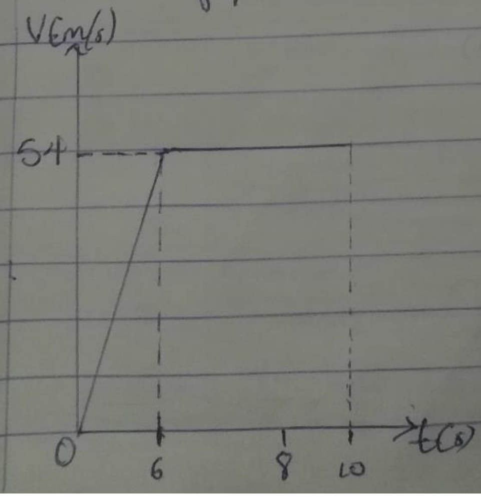
$= 1.5 \times 36$

$V = 54 m/s$

from $t = (6 - 10)s$, $s = 108$

$\therefore V = 0$

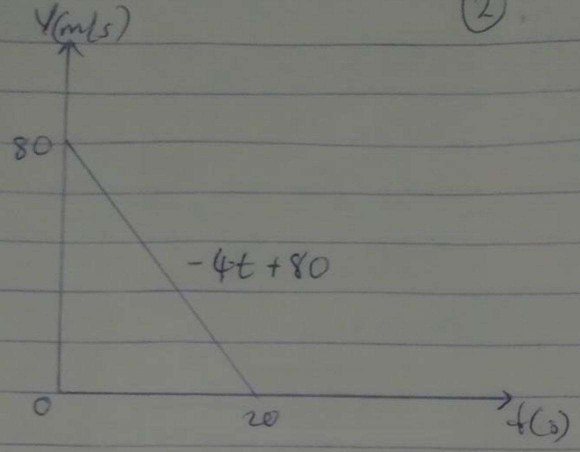
V - t graph



4. What are the advantages of public licensing for a profession?

②

2



i $S = \int v\,dt$

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

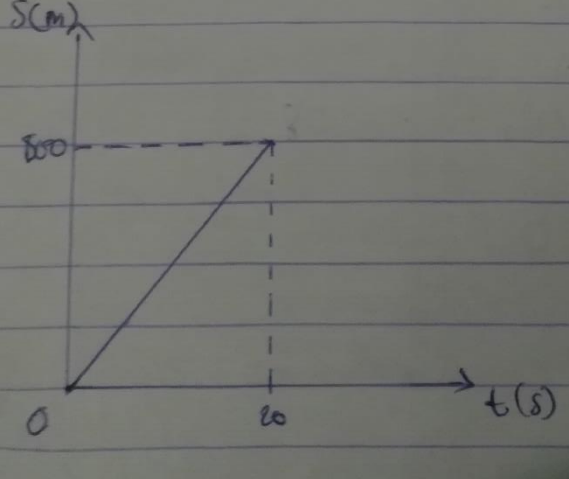
$S = -2t^2+80t$

at $t = 20$,

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

$s = 1600-800 = 800\,m$

S-t graph



ii) **Acceleration**

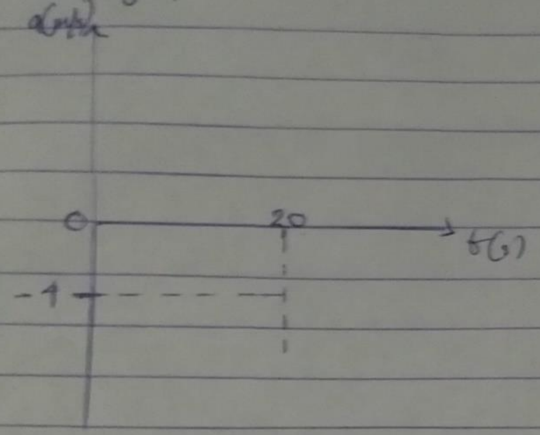
$a = dv/dt$

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

at $t = 20s$

$a = -4\ m/s^2$

a – t graph



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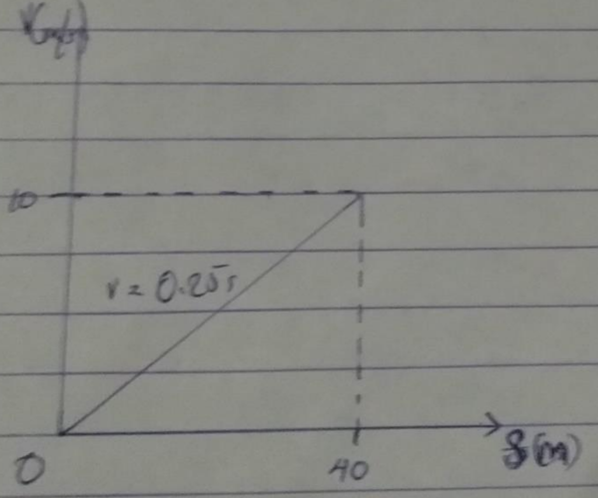


$a = \left(dv/ds\right)v$

$v = 0.25s$

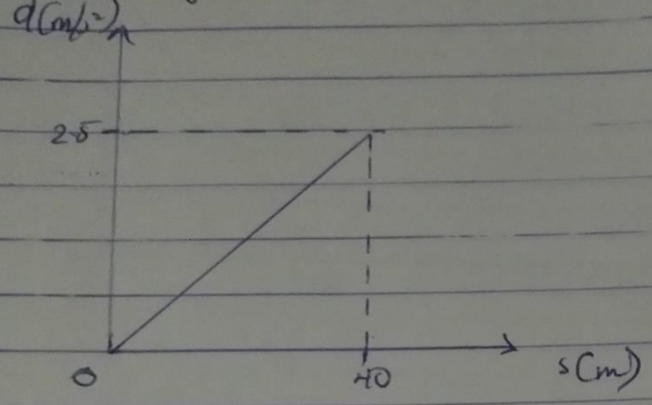
$a = 10 \times d(0.25/ds$

$a = 10 \times 0.25$

$a = 2.5\ m/s^2$

④

a - s graph



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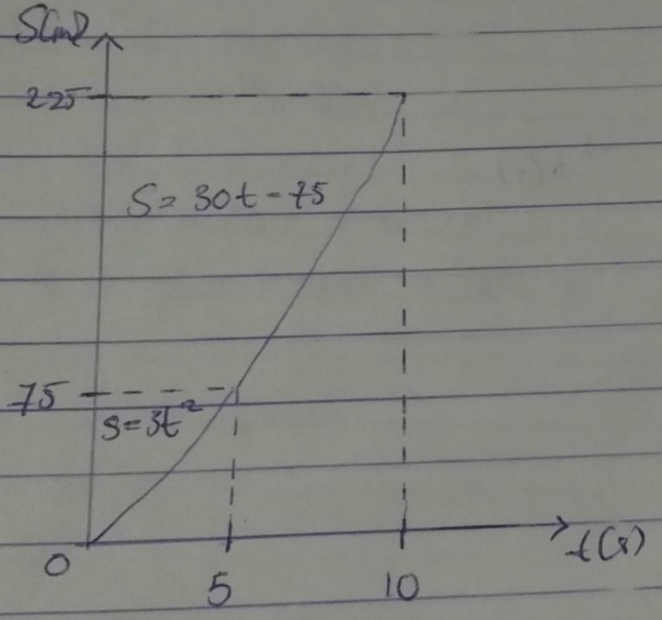

i $v = ds/dt$

at $t = 5s$

$v = 6t = 6 \times 5$

$= 30\ m/s$

at $t = 10s$

$v = 30\ m/s$

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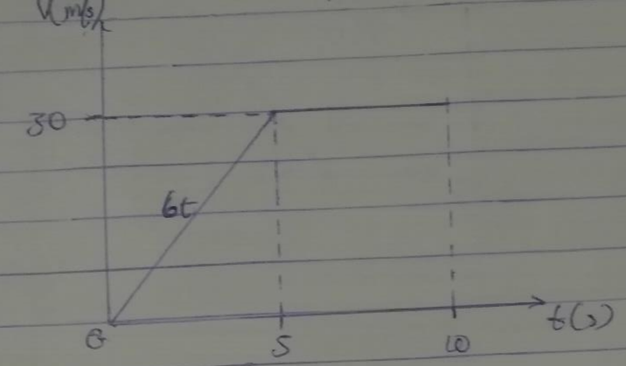
v - t graph



ii

$a = dv/dt$

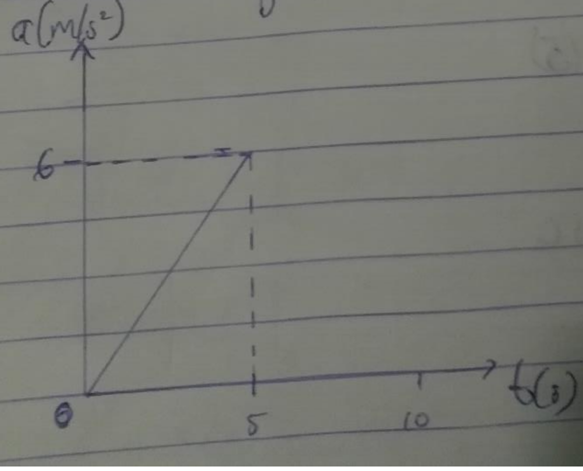
at $t = 5s$

$a = 6 m/s$

at $t = 10s$

$a = 0 m/s$

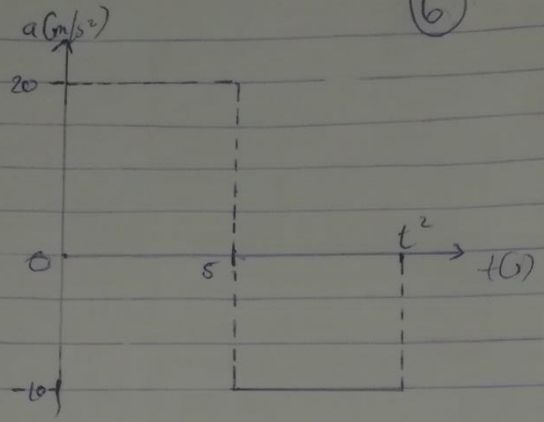
a - t graph



4. What are the advantages of public licensure for a profession?

⑥

5



i

$v = \int a\,dt$

$v = \int 20\,dt$

$v = 20t$

at $t = 5s$

$v = 20 \times 5 = 100\,m/s$

$5s < t \leq t'$

$\int_{100}^{0} dv = \int_{5}^{t'} -10\,dt$

$v - 100 = \left| -10t \right|_{5}^{t'}$

$v - 100 = -10t' + 10(5)$

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

at t', $v = 0$

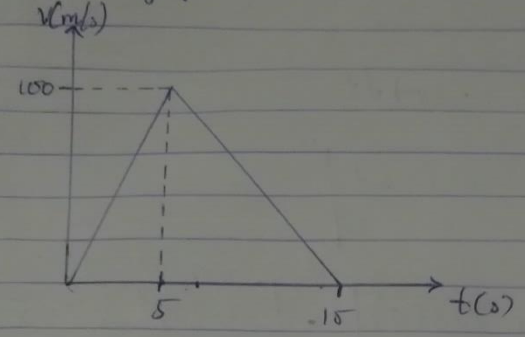
$0 - 100 = -10t + 50$

$10t' = 150$

$t' = 15s$

⑦

v-t graph



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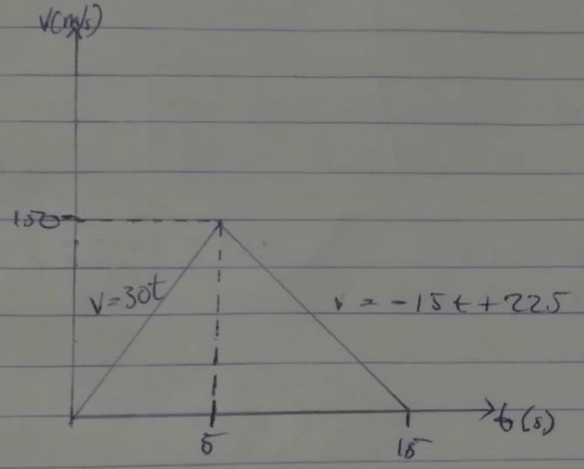

$0 \leq t < 5,$

$v = 30t$

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

$$s = \left| 15t^2 \right|_0^5$$

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

$$s = 15 \times 25$$

$$s = 375 m$$

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4. What are the advantages of public licensure for a profession?

CHAPTER FOUR

⑧

$5_s \le t \le 15_s$

$v = -15t + 225$

$$\int_{375}^{s} ds = \int_{5}^{15} (-15t + 225)\,dt$$

$$s - 375 = \left| \frac{-15t^2}{2} + 225t \right|_{5}^{15}$$

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

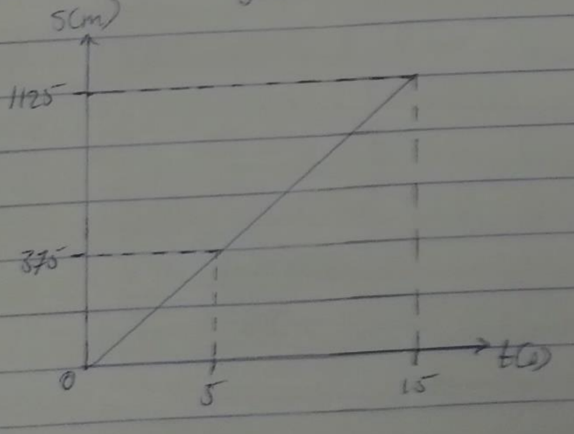
$$s - 375 = \left[\frac{-15 \times 225}{2} + 3375\right] - \left[\frac{-15 \times 25}{2} + 1125\right]$$

$$s - 375 = (-1687.5 + 3375) - (-1875 + 1125)$$

$s - 375 = 1687.5 - 937.5$

$s - 375 = 750$

$s = 1125$

s – t graph