

ETOK NSIBIET-ABASI EDM

18/ENG02/039

COMPUTER ENGINEERING

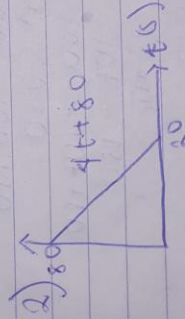
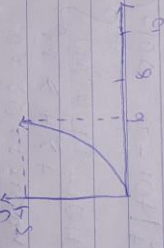
Elok Nsibiel - Abos, Estem
15/ENG02/039



$v = \frac{ds}{dt}$
 $v = 1.5t^2$
 $dt = \frac{ds}{1.5}$
 $2 \cdot 1.5 \times 36$
 $v = 54 \text{ m/s}$

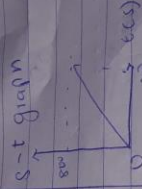
from $t = 6s$ to $10s$, $s = 108$
 $v = 10$

v-t graph



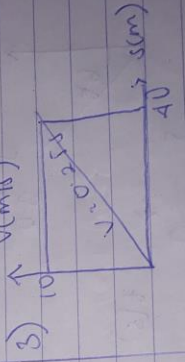
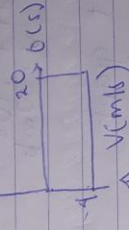
$i \int \int dt \int ds (-1 + 180)$
 $s = 2t^2 + 80t$
 at $t = 20s$

$s = (20)^2 + 80(20)$
 $s = 1600 + 1600 = 3200 \text{ m}$



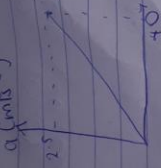
ii) acceleration
 $a = \frac{dv}{dt}$

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



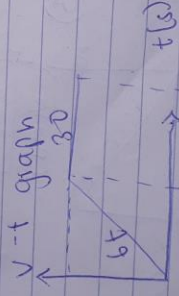
$a = \left(\frac{dv}{ds} \right) v$
 $v = 0.25$
 at $t = 25$

a-s graph



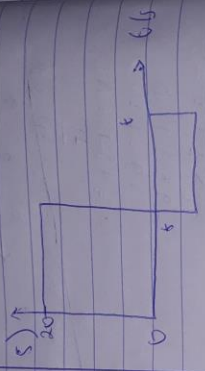
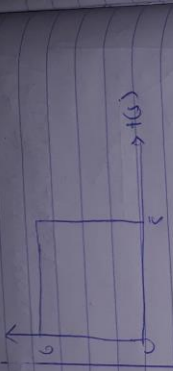
$v = \frac{ds}{dt}$

at $t = 5s$
 $v = 6.5$
 $\approx 30 \text{ m/s}$
 at $t = 10s$
 $v = 10 \text{ m/s}$



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

at $t = 3s$
 $a = 3 \text{ m/s}^2$



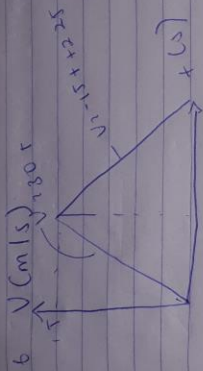
1) $v = \frac{ds}{dt}$
 $v = 20$
 at $t = 5s$

$v = 20 + 100 \text{ m/s}$
 $s = 20t + \frac{1}{2}at^2$
 $\int dv = \int ds = 10t$

$v = 100 = 20 + 10t \Rightarrow t = 8$
 $v = 100 = 20 + 10t + 5t^2$
 at $t = 10, v = 20$
 $v = 100 = 20 + 10t + 5t^2$
 $10t + 5t^2 = 80$
 $2t + t^2 = 16$
 $t^2 + 2t - 16 = 0$

$v = 9.19$





$$0 \leq t \leq 30$$

$$V = 12t$$

$$\int_0^{30} 12t \, dt = \int_0^{30} 30t$$

$$S = 15t^2 + 30t$$

$$S = 15(30)^2 + 30(30)$$

$$S = 15 \times 25$$

$$S = 375$$

$$S = 15t^2 + 25t$$

$$S = \frac{15t^2 + 25t}{2}$$

$$S = 375 \left[\frac{15 \times 225 + 8375}{2} \right] - \left[\frac{15 \times 225 + 1125}{2} \right]$$

$$S = 375 \times 1687.5 - 937.5$$

$$S = 375 \times 750$$

$$S = 112500$$

S-t graph

