

4. (FD-10)

$$\text{for } 0 \leq t \leq 5$$

$$s = 2t^2$$

$$\frac{ds}{dt} = v = 4t \text{ m/s}$$

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

$$v = 4(5) = 20 \text{ m/s}$$

$$\text{for } 5 \leq t \leq 10$$

$$v = \frac{\Delta s}{\Delta t} = \frac{225 \text{ m} - 75 \text{ m}}{10 - 5} = 30 \text{ m/s}$$

For $a-t$ graph

$$\text{for } 0 \leq t \leq 5, \quad a = 4 \text{ m/s}^2$$

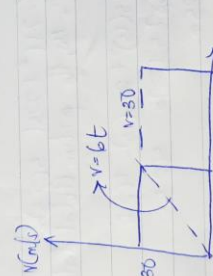
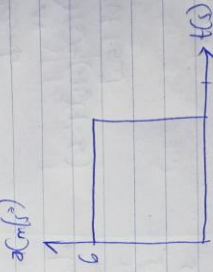
$$\text{for } 5 \leq t \leq 10, \quad a = \frac{dv}{dt} = 6 \text{ m/s}^2$$

$$5 \leq t \leq 10$$

$$v = 20 \text{ m/s}$$

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

$$\frac{dv}{dt}$$



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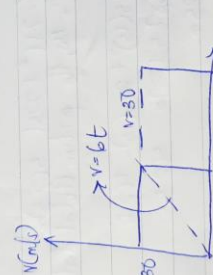
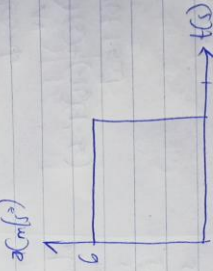
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$$5 \leq t \leq 10$$

$$v = 20 \text{ m/s}$$

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

$$\frac{dv}{dt}$$



$$a = \frac{dv}{dt} = -4t \text{ (m/s}^2\text{)}$$

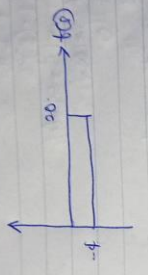
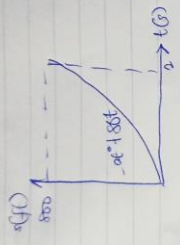
$$s = -2t^2 + 180t$$

$$\text{at } t = 20$$

$$s = -2(20)^2 + 180(20)$$

$$= -800 + 3600$$

$$= 2800 \text{ m}$$



5. (F12-11)

$$a ds = v dv$$

$$a = v \frac{dv}{ds}$$

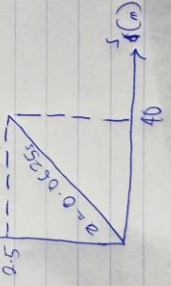
$$a = (0.25s) \left[\frac{d}{ds} (0.25s) \right]$$

$$a = 0.25s \times 0.25$$

$$a = 0.0625s$$

$$\text{at } s = 40 = 0.0625(40)$$

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



Simpulan Dan rumus
 18/7/2020
 Model rumus

(1) $v = \frac{ds}{dt}$ (12-9)

$s = 0.5t^3$

$\frac{ds}{dt} = v = 8(0.5)t^2$

$v = 1.5t^2 \text{ m/s}$

at $t = 6$

$v = 1.5(6)^2$

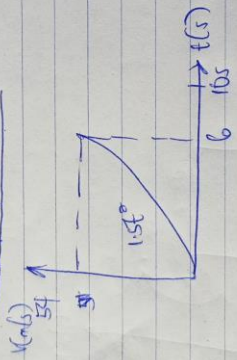
$v = 36 \times 1.5 = 54 \text{ m/s}$

at $s = 108 \text{ m}$

$\frac{ds}{dt} = 0$

\therefore for t , $v = 0 \text{ m/s}$

v-t graph for 12-9



(12-10)

$y = (-4t + 80) \text{ m/s}$

$s = \int v dt = -\frac{4}{2}t^2 + 80t$

$0 = (-4t + 80) \text{ ft}$

$\frac{dy}{dt} = a, v = (-4t + 80) \text{ ft/s}$