

# HECHERE CITZAMUZO - A

## 18/10/2020

1) Given that

$$s = 0.5t^3 \text{ m}$$

$$\frac{ds}{dt} = v = 1.5t^2$$

$$50 \text{ m/s} = 1.5t^2$$

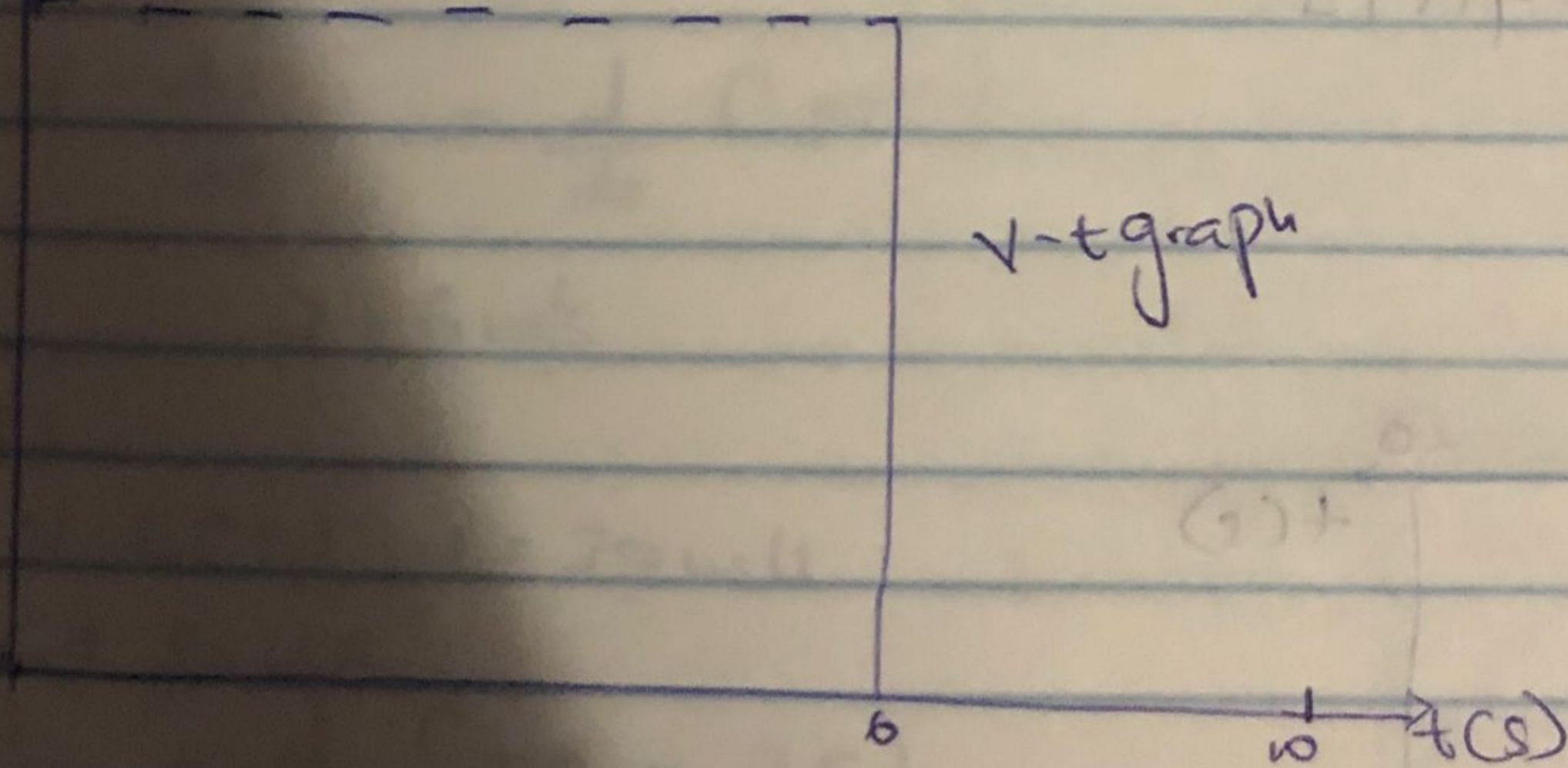
$$v = 1.5(6)^2 = 54 \text{ m/s}$$

$$s = 108 \text{ m}$$

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

v (m/s)

54



2) Given that

$$v = -4t + 80$$

$$s = \int_0^{20} (-4t + 80) dt$$

$$s = [-2t^2 + 80t] \Big|_0^{20}$$

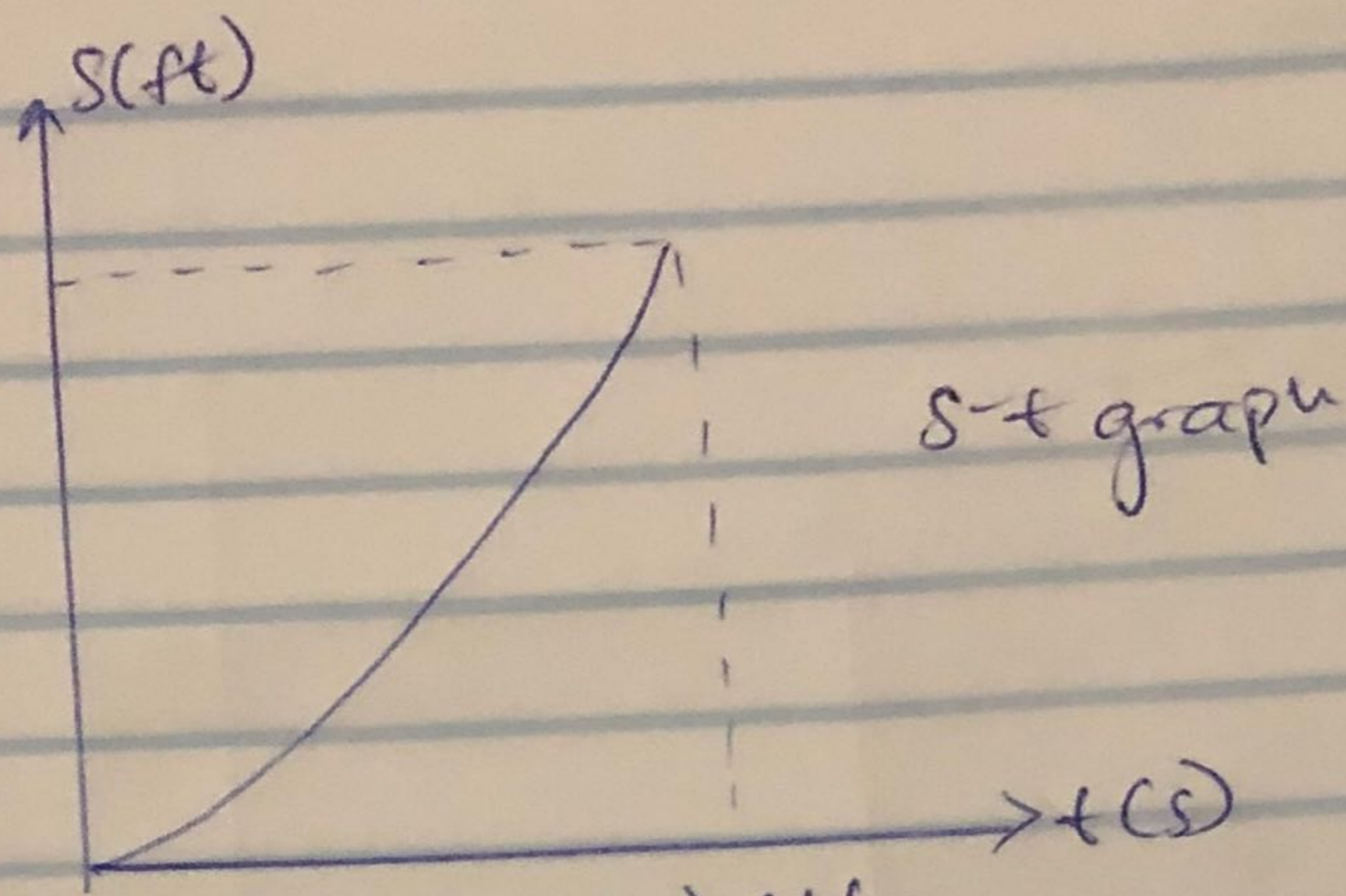
$$\therefore \text{at } t = 20$$

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

$$s = -800 + 1600$$

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

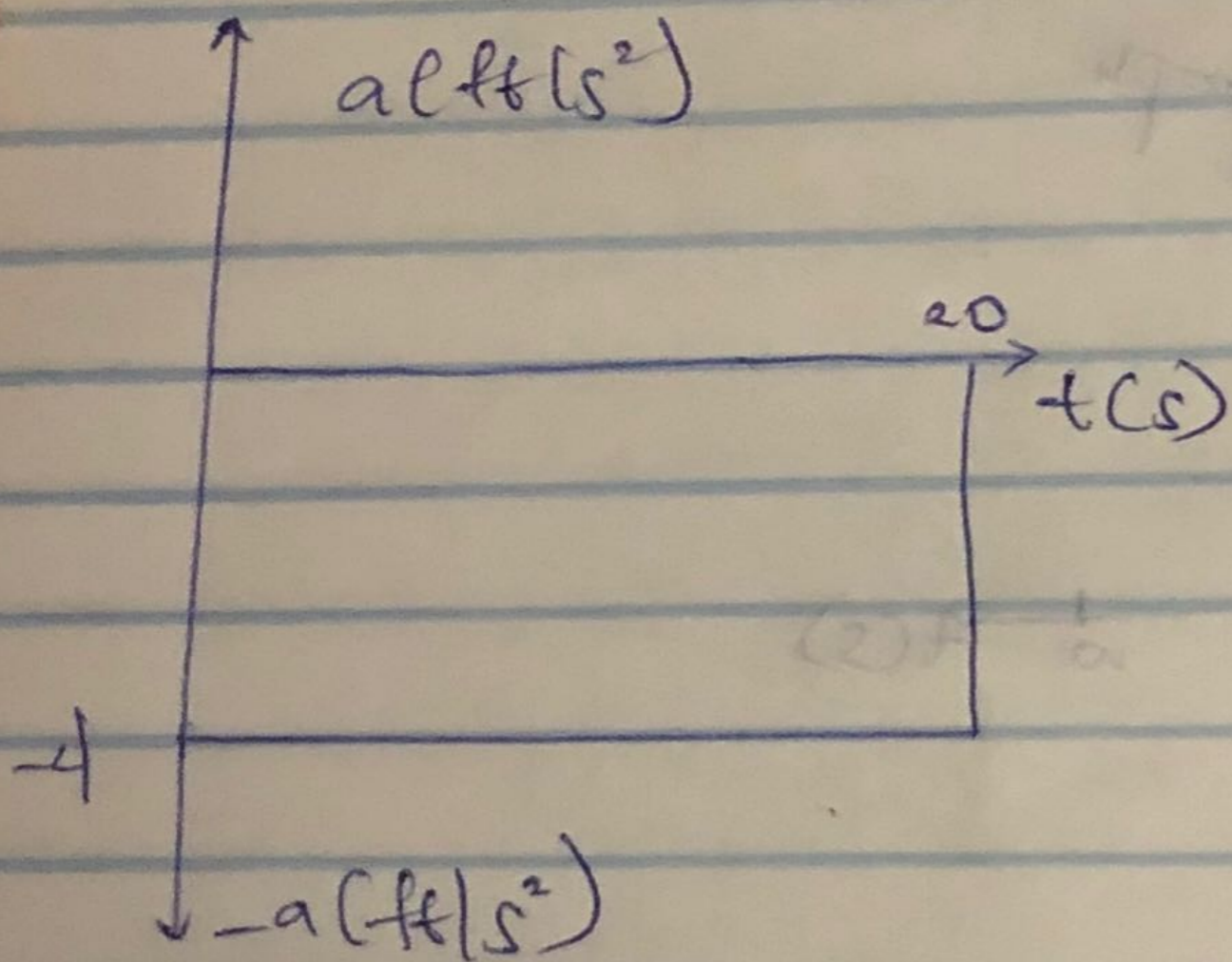




$$v = (-4t + 80) \text{ ft/s}$$

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

$$a = -4 \text{ ft/s}^2$$



3)  $v = (0.25s) \text{ m/s}$

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

$$a = 0.25s (0.25)$$

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

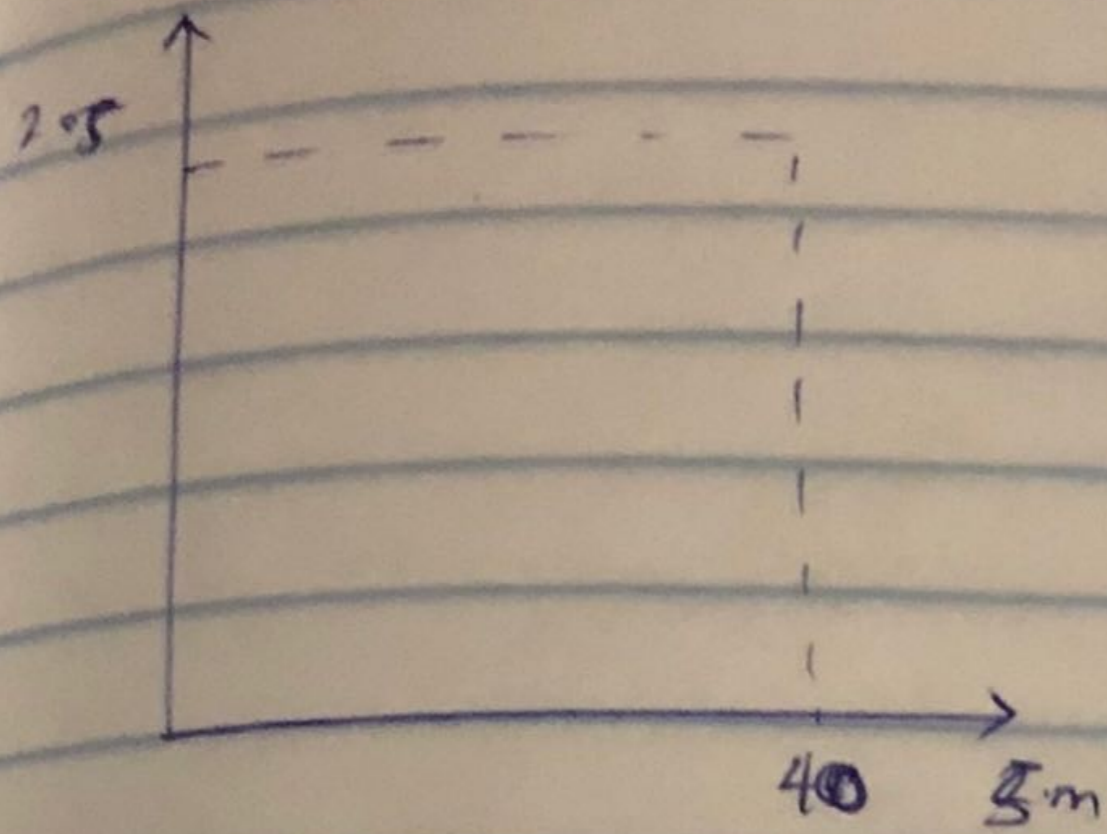
At  $s = 40 \text{ m}$

$$a = (0.0625 \times 40)$$

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

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





$$1) \quad v = \frac{ds}{dt} \quad \text{QUESTION 5}$$

$$v = \frac{ds}{dt} = \frac{d}{dt} (3t^2)$$

$$v = 6 \text{ m/s}$$

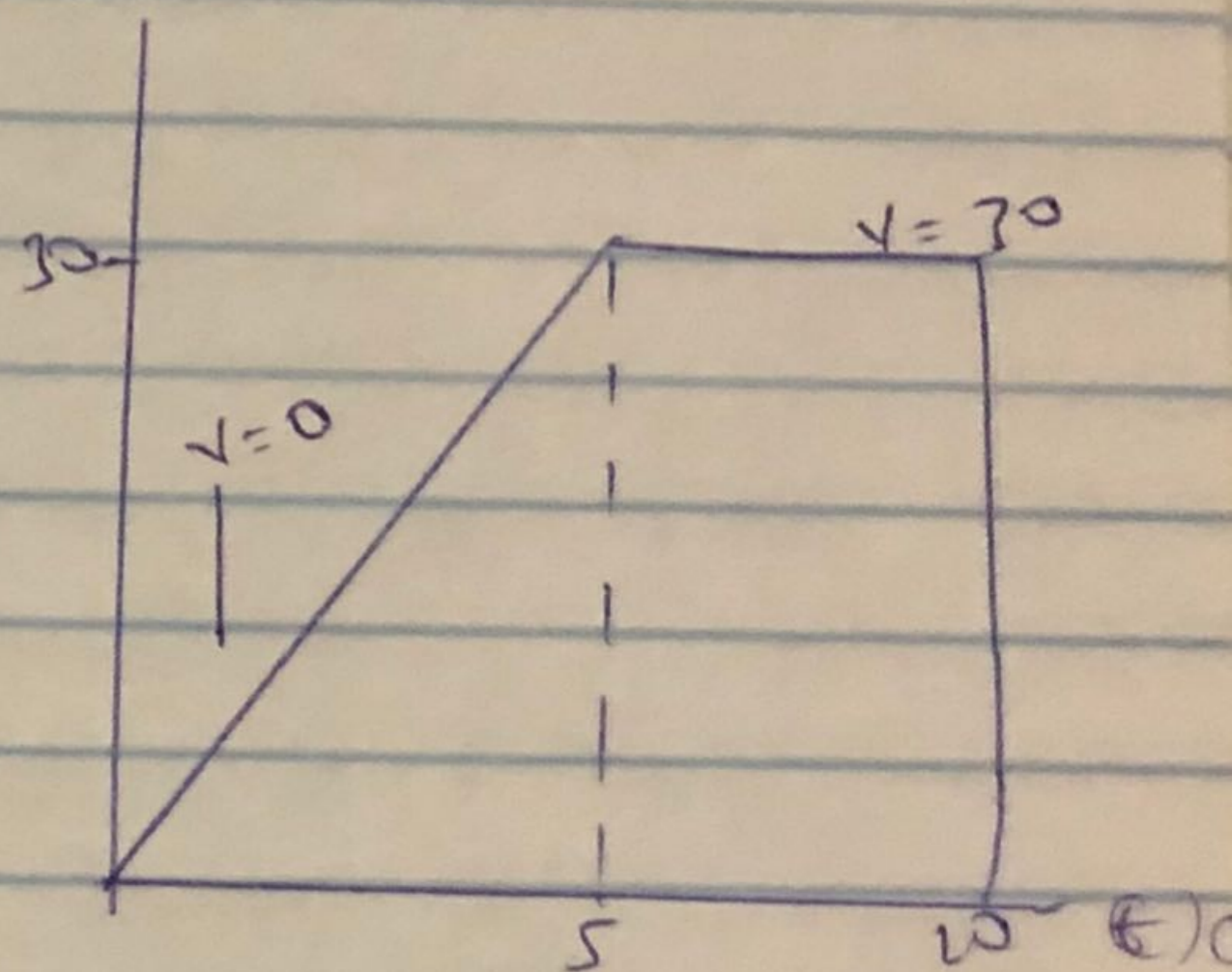
$$t = 5 \text{ s}$$

$$v = 6(5) \quad v = 30 \text{ m/s}$$

$$5 \text{ s} < t \leq 10 \text{ s}$$

$$v = \frac{ds}{dt} = \frac{d}{dt} (30t - 75)$$

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



for the (a-t graph)

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

$$0 \leq t < 5 \quad v = 6t$$

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

$$\text{for } 5 \leq t \leq 10, \quad v = 30$$

$$a = \frac{dv}{dt} = \frac{d}{dt} (30) = 0$$



The a-t graph

