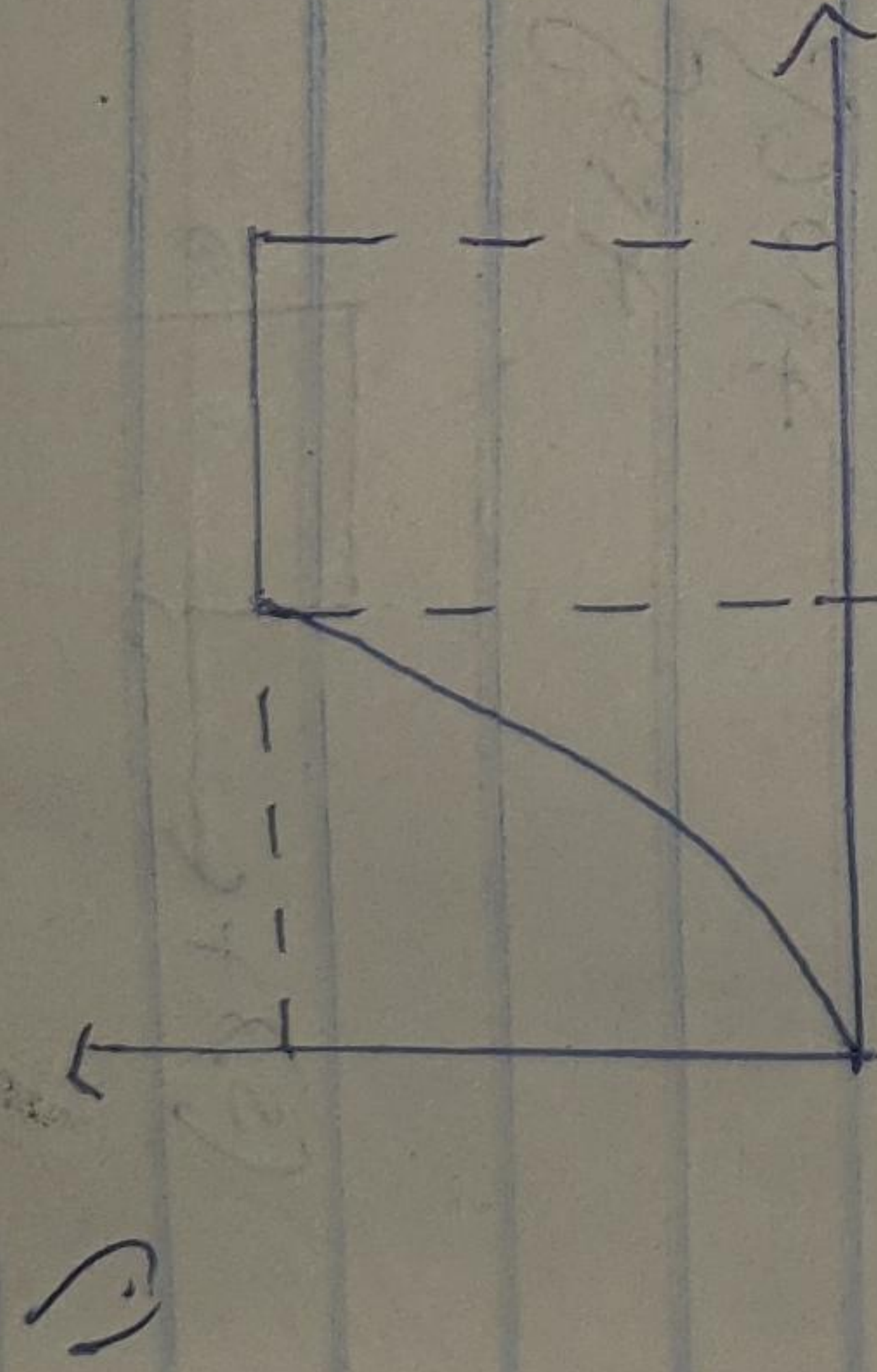


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18ENG021007

COMPUTER ENGINEERING



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

$$v = 1.5t$$

$$\text{at } t = 6s$$

$$v = 1.5 \times 6^2$$

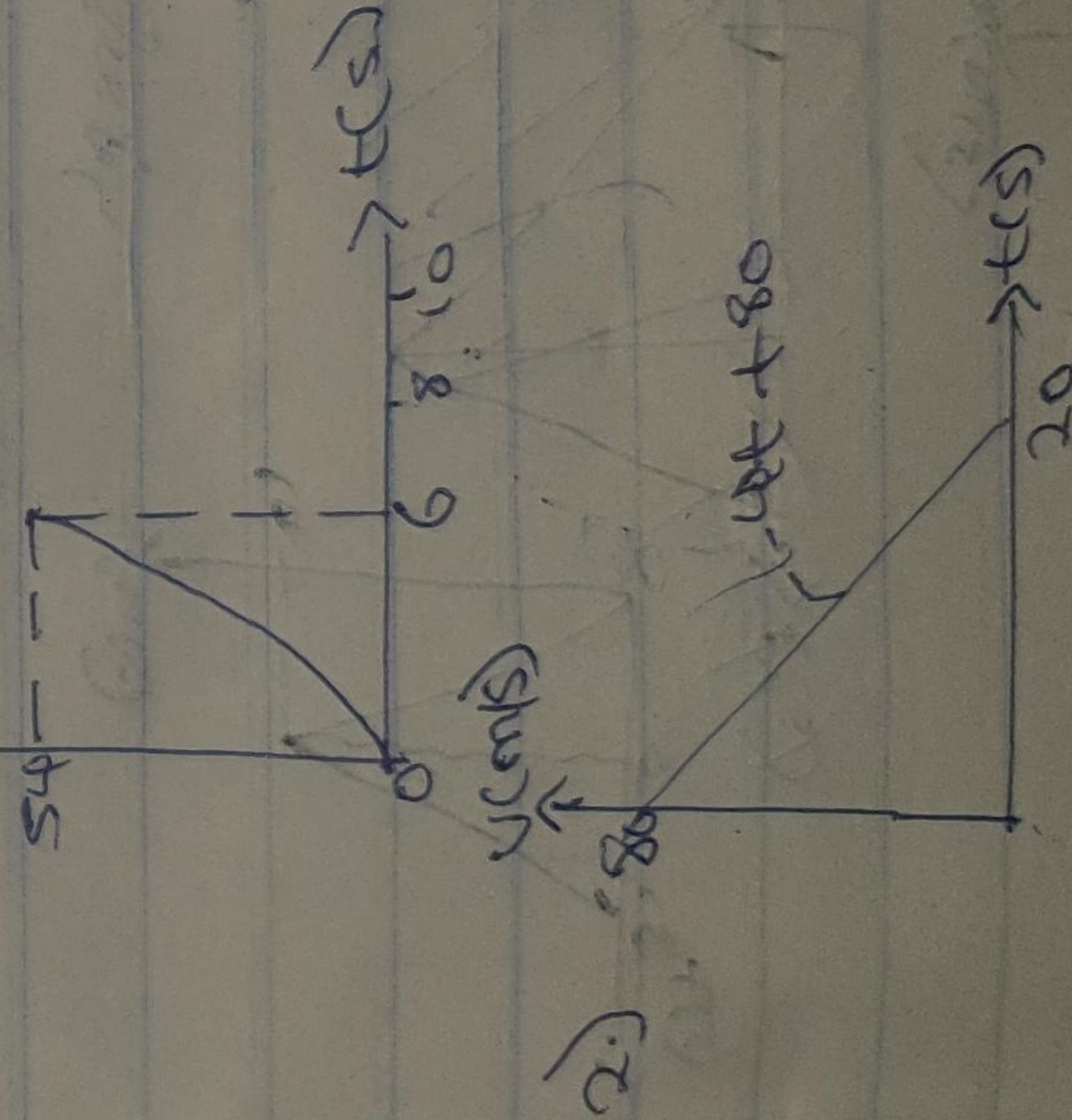
$$= 1.5 \times 36$$

$$v = 54 \text{ m/s}$$

$$\text{from } t = 6s \text{ to } 8s, \quad 8 = 108$$

$$\therefore v = 0$$

$$v = t \quad \frac{dv}{dt} = 1$$



$$s = \int v dt$$

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

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

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

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

$$s = 1600 - 800 = 800m$$

$$s = t \quad \frac{ds}{dt}$$

find acceleration

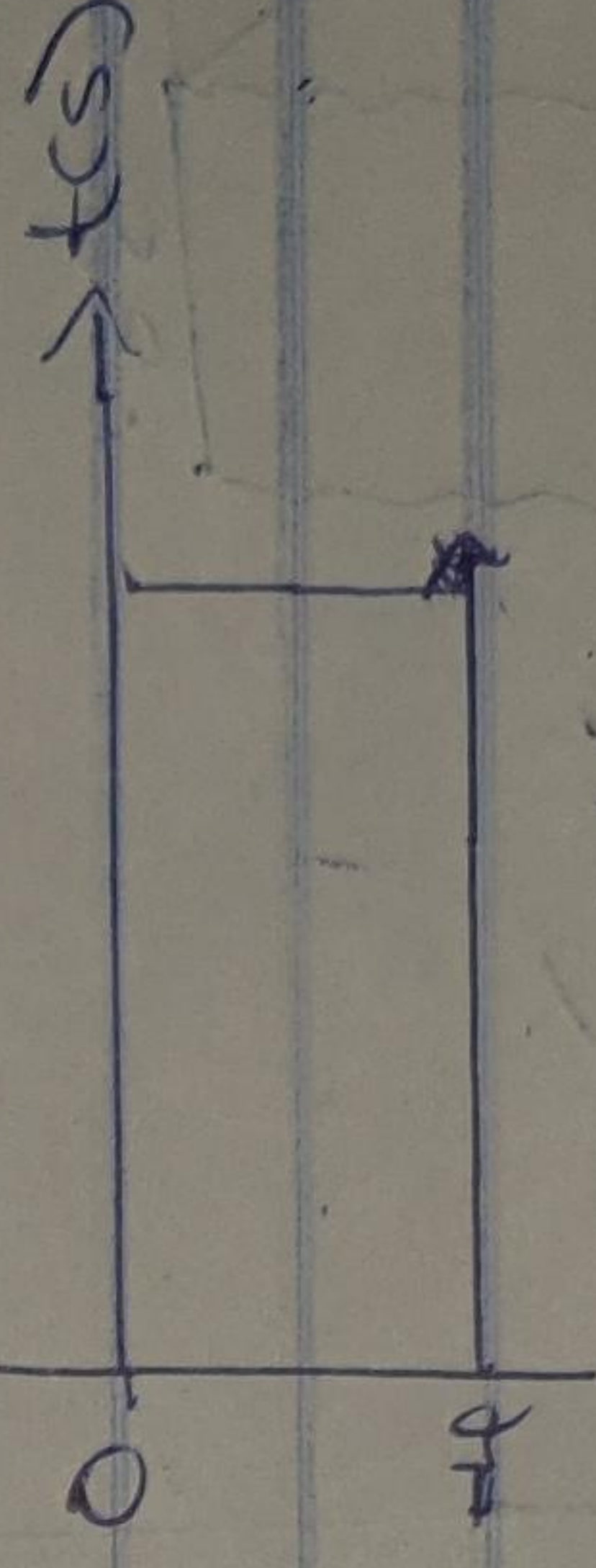
$$a = \frac{dv}{dt}$$

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

$$\text{at } t = 20s, \quad a = -4 \text{ m/s}^2$$

$$a = t \quad \frac{da}{dt}$$

$$a = 1$$



$$v = 0.25s$$

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

$$v = 0.25s$$

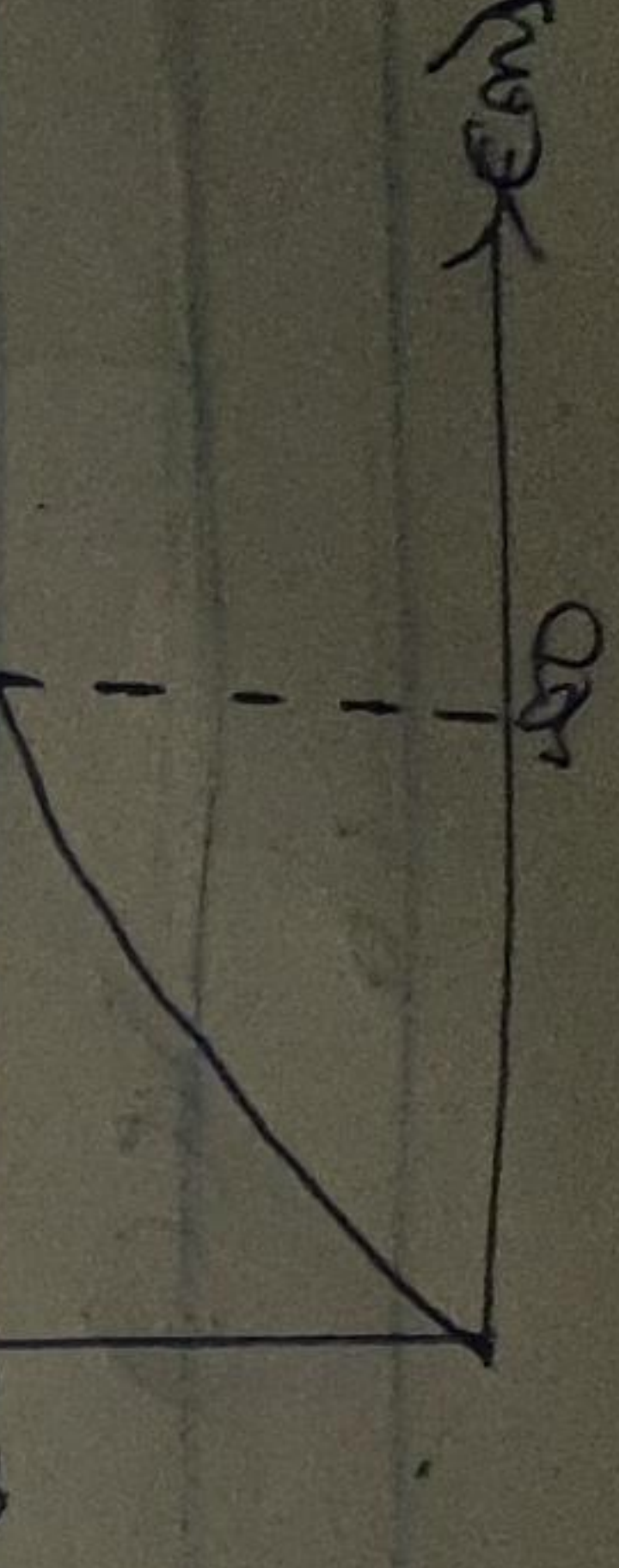
$$a = 10 \times 2(0.25s) \quad ds$$

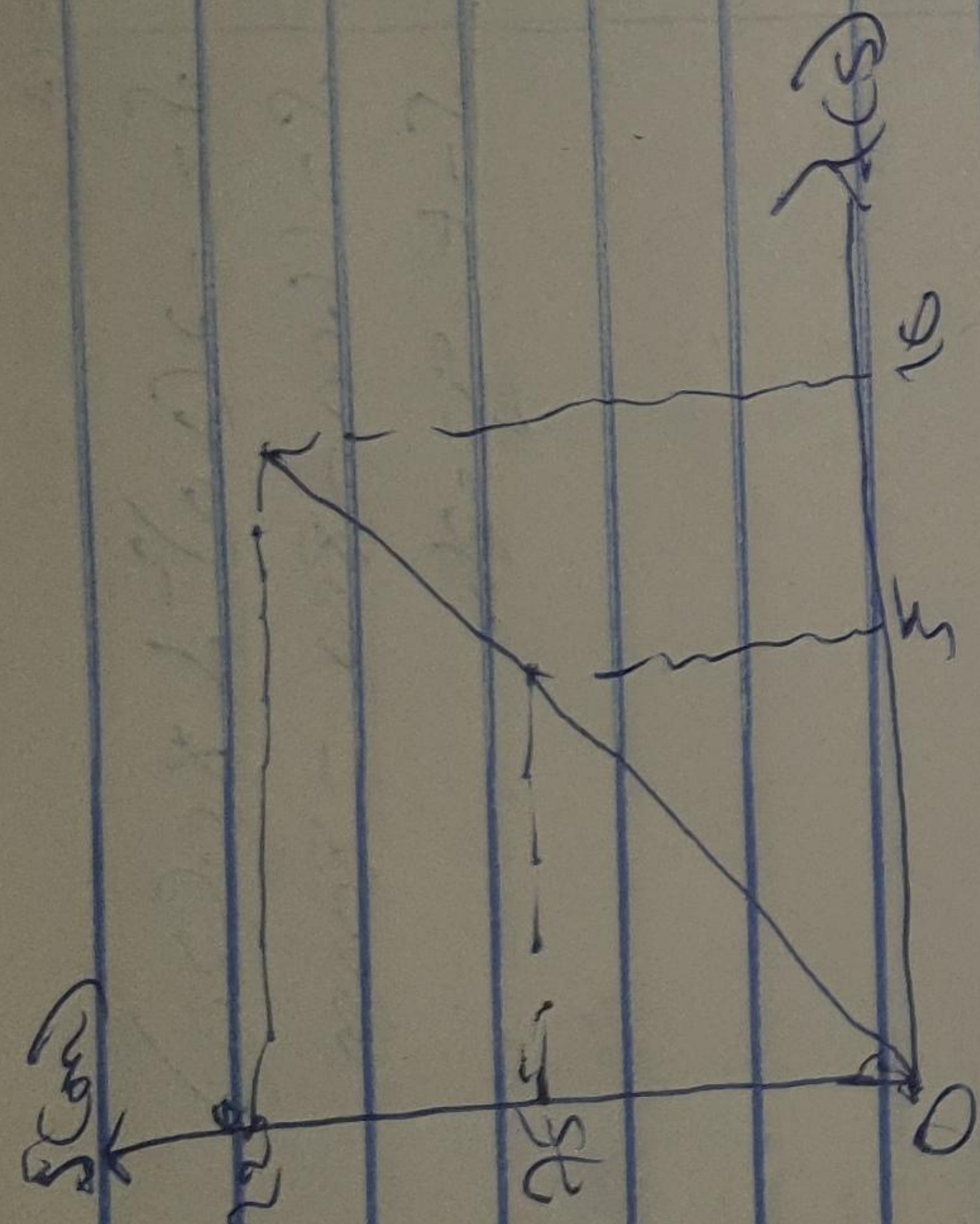
$$a = 10 \times 0.25$$

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

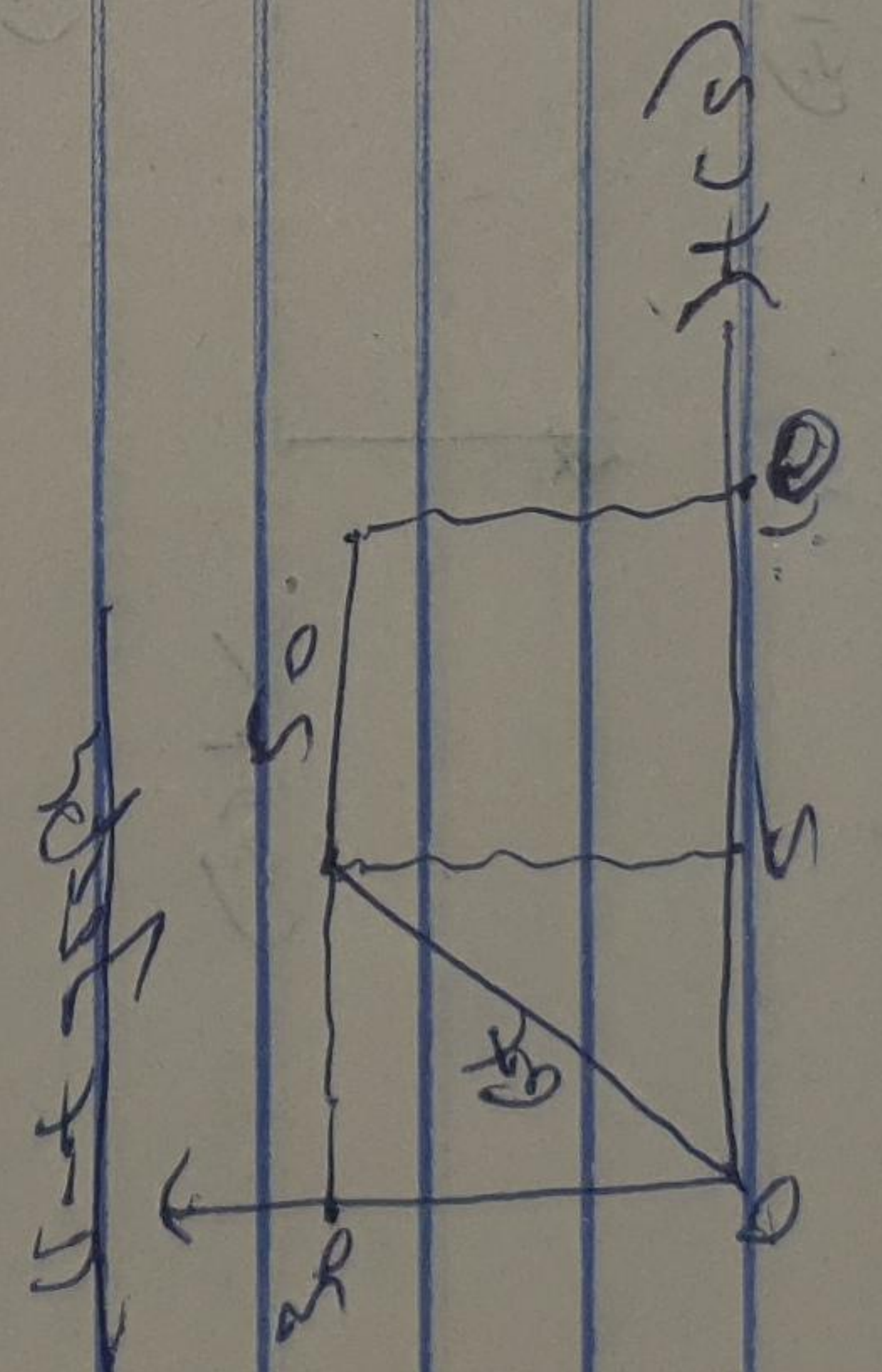
$$a = s \quad \frac{da}{ds}$$

$$a = 2.5$$



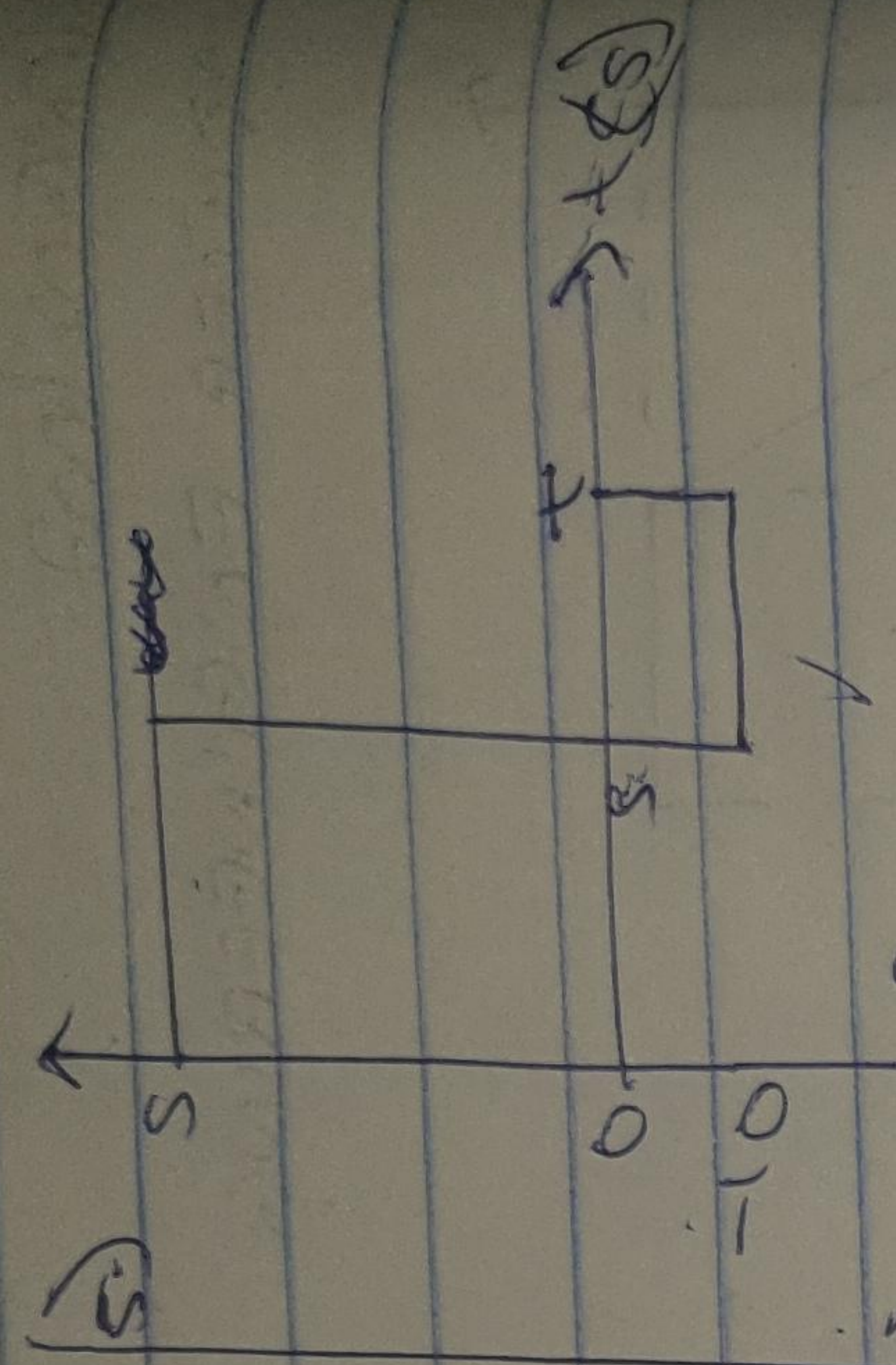
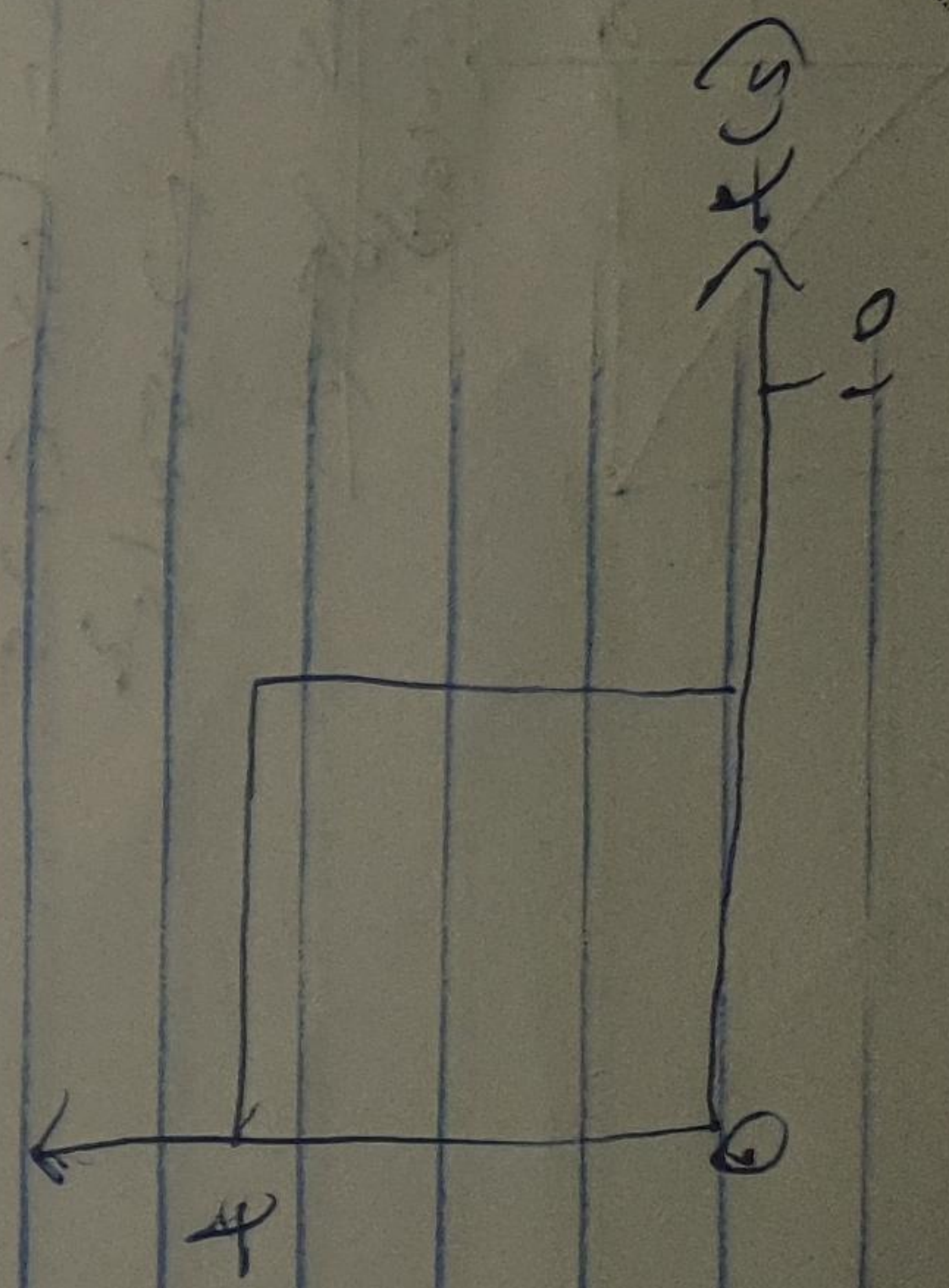


$v = \frac{ds}{dt}$
 at $t = 5$
 $v = 6t = 6 \times 5 = 30 \text{ m/s}$
 at $t = 10$
 $v = 30 \text{ m/s}$



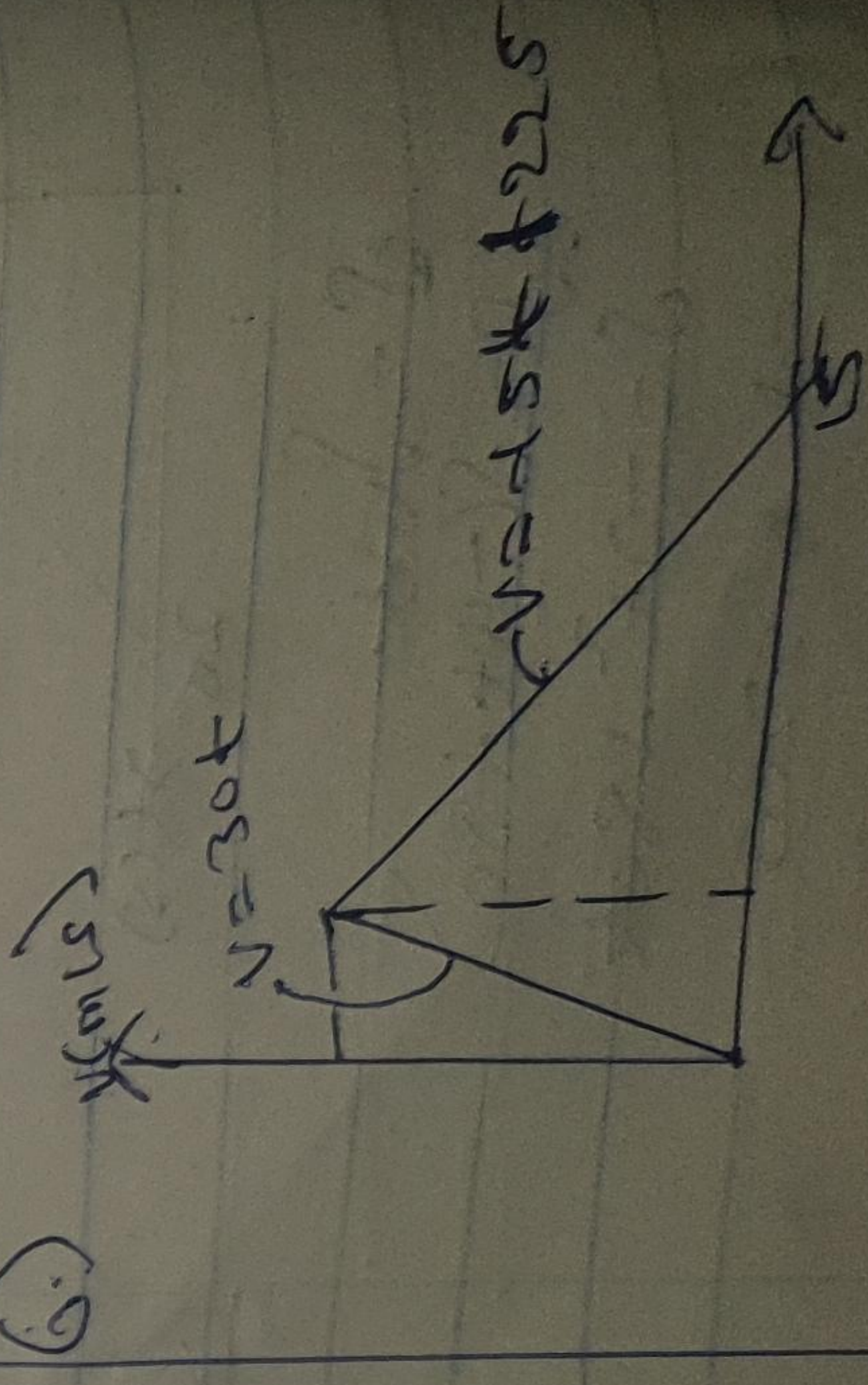
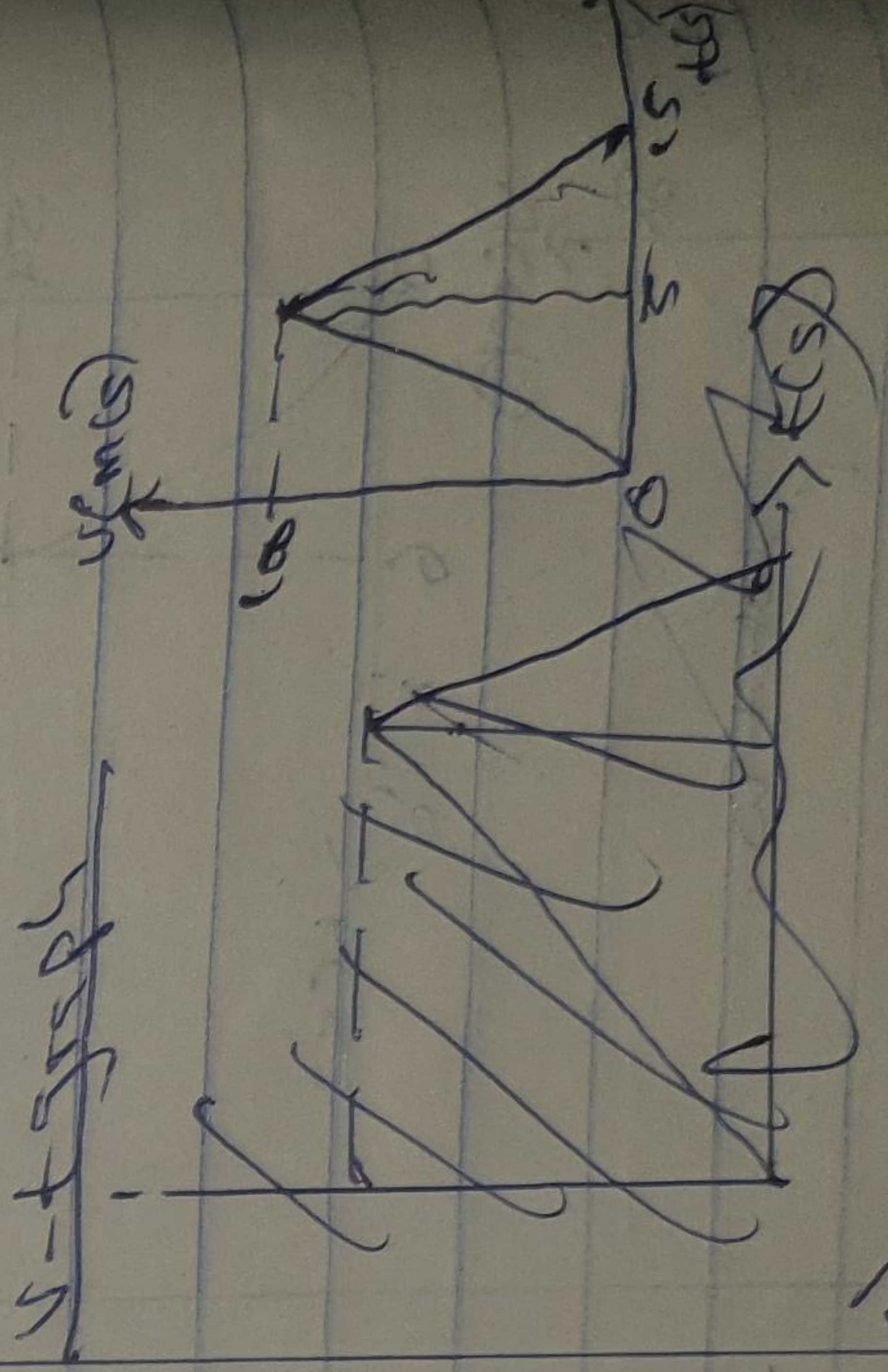
$v = \frac{ds}{dt}$
 at $t = 5$
 $s = 6 \times 5 = 30$
 at $t = 10$
 $s = 30$

~~Graph~~



$v = \frac{ds}{dt}$
 $v = 20t$
 at $t = 5$
 $v = 20 \times 5 = 100 \text{ m/s}$

$s = \int v dt = \int 20t dt = 10t^2$
 $s = 10(5)^2 = 250$
 $v = 100 = -10t + 50$
 $10t = 50 - 100 = -50$
 $t = -5$



$$0 \leq t \leq 5$$

$$v = 30t$$

$$i = \int_0^t 30t dt$$

$$s = 15t^2$$

$$s = 15(5)^2 = 15(25)$$

$$s = 15 \times 25$$

$$s = 375 \text{ m}$$

$$s = 15t^2 + 225$$

$$v = 15t + 225$$

$$\frac{ds}{dt} = 15t + 225$$

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

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

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

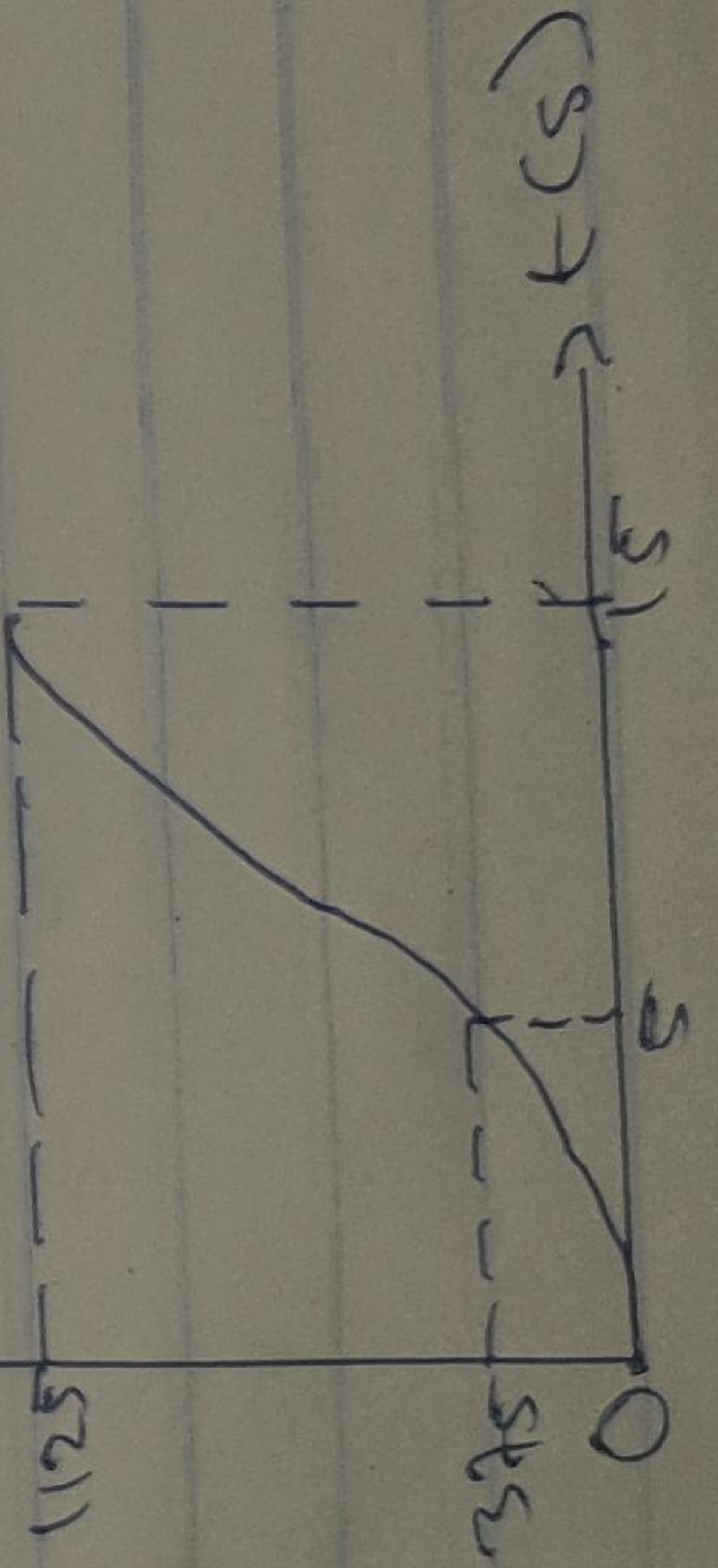
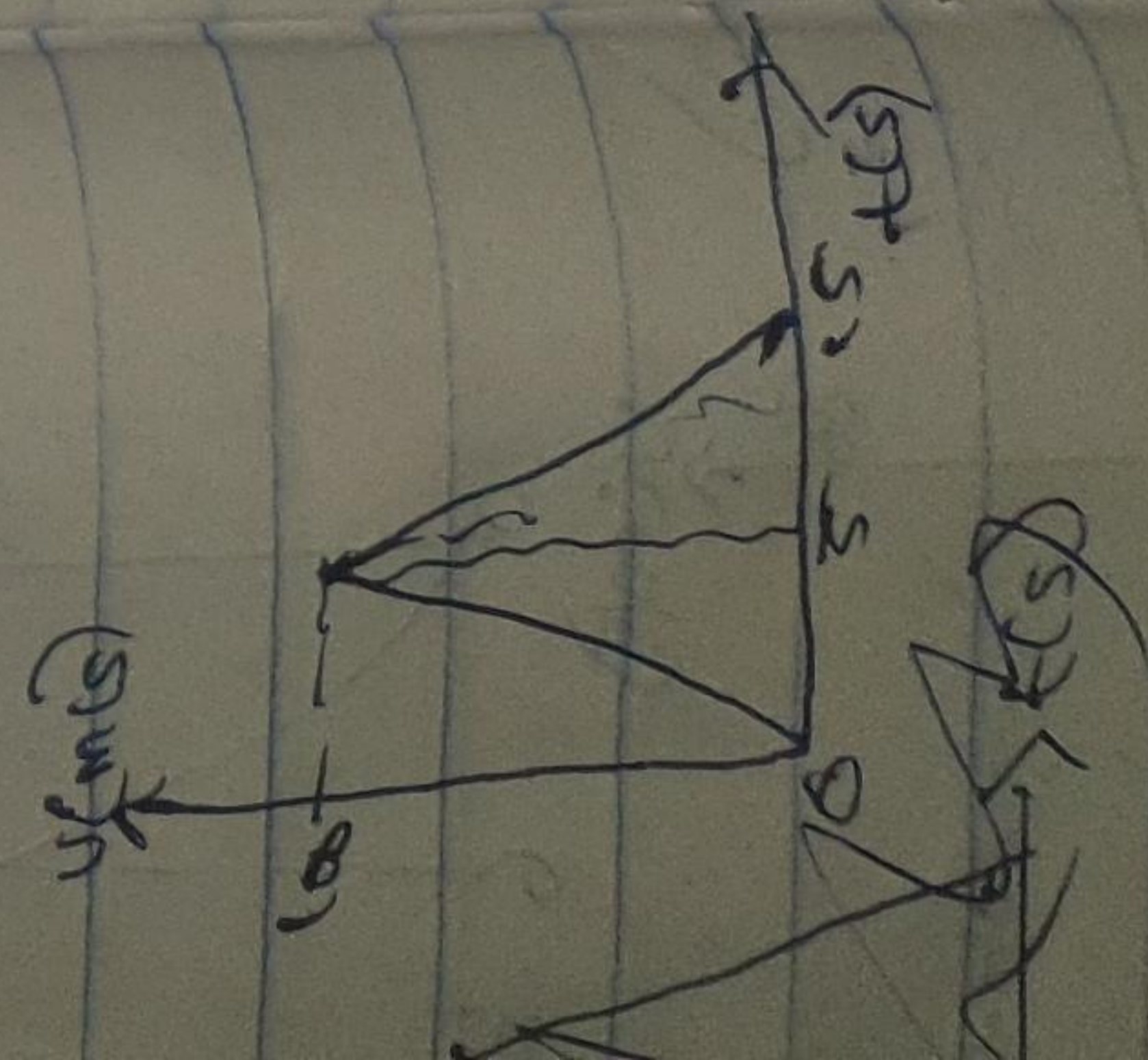
$$s - 375 = (-1687.5 + 3375) - (-187.5 + 1125)$$

$$s - 375 = 1687.5 - 937.5$$

$$s - 375 = 750$$

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

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



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