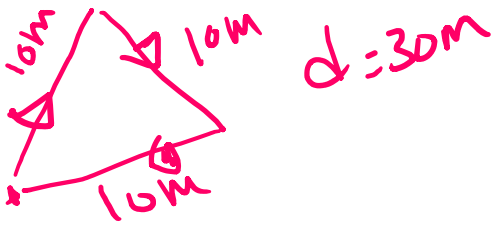
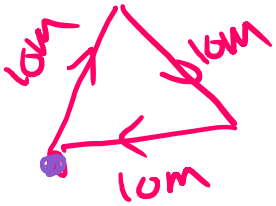
SCALAR	VECTOR
distance	displacement
speed	velocity = speed + dir
Time	acceleration
mass	weight (force)
density	
volume	
Temp	
Pressure	



d = 30m



d = 0

FORCE

- momentum
- moment
- impulse

$$V = \frac{S}{t}$$ → displacement.

Δ → change.

change

$$acc = \frac{\Delta V}{\Delta t} = \frac{V - u}{t}$$

$$at = v - u.$$

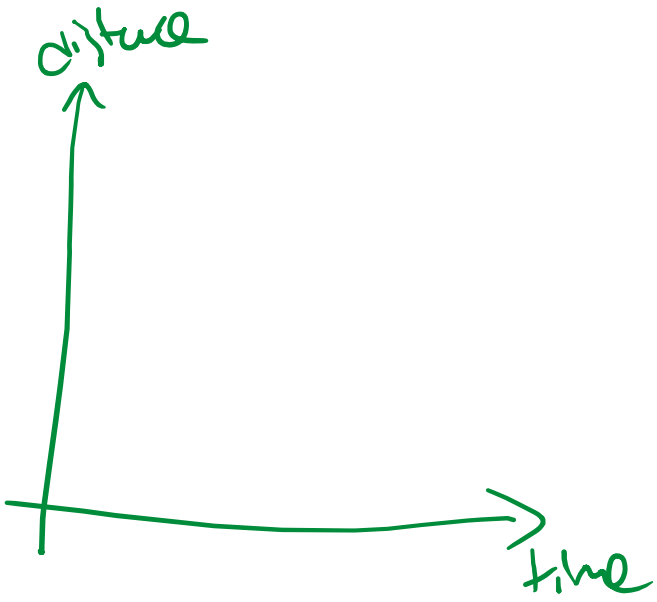
$$v = u + at$$

$$\text{av speed} = \frac{\text{tot d.}}{\text{tot t}} = \frac{V + u}{2}$$

$$\frac{d}{t} = \frac{v + u}{2}$$

motion graphs

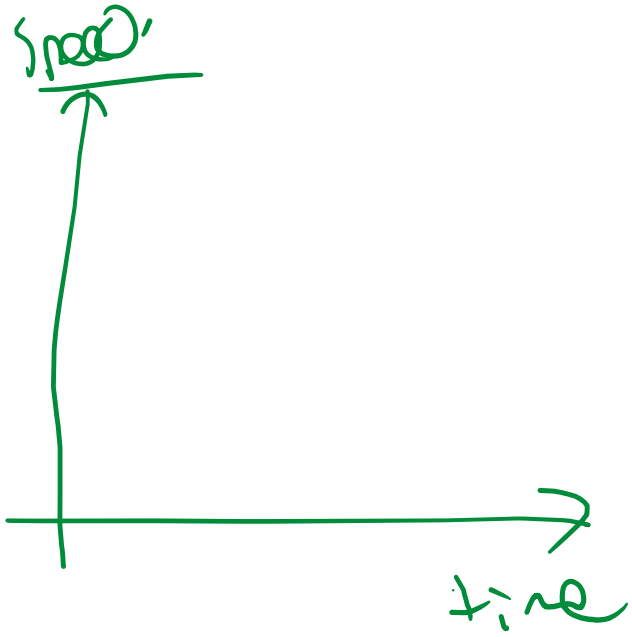
distance - time



we can get

1. slope = speed

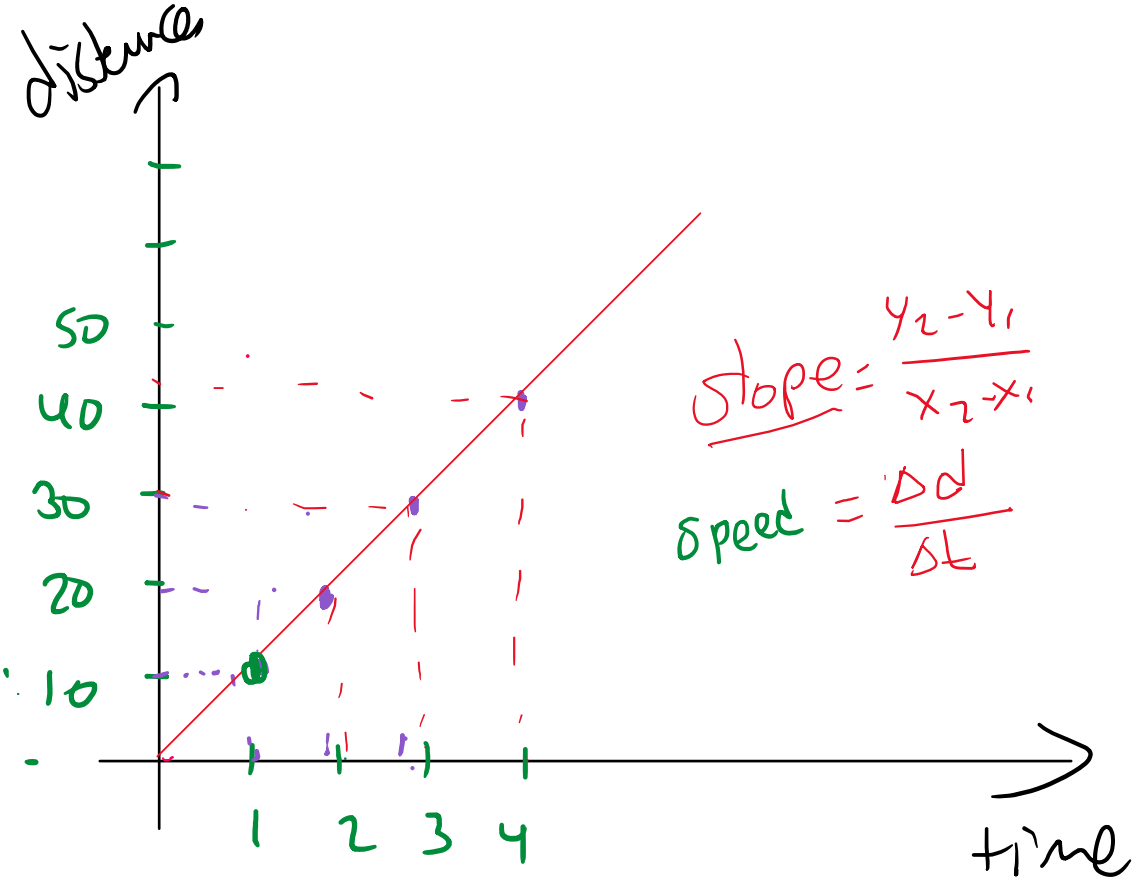
speed - time



we can get

1. slope = acc.
2. area under graph
   ⇒ distance

distance time graph



$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{speed} = \frac{\Delta d}{\Delta t}$$

$$Sp_1 = \frac{10}{1} = 10\ m/s$$

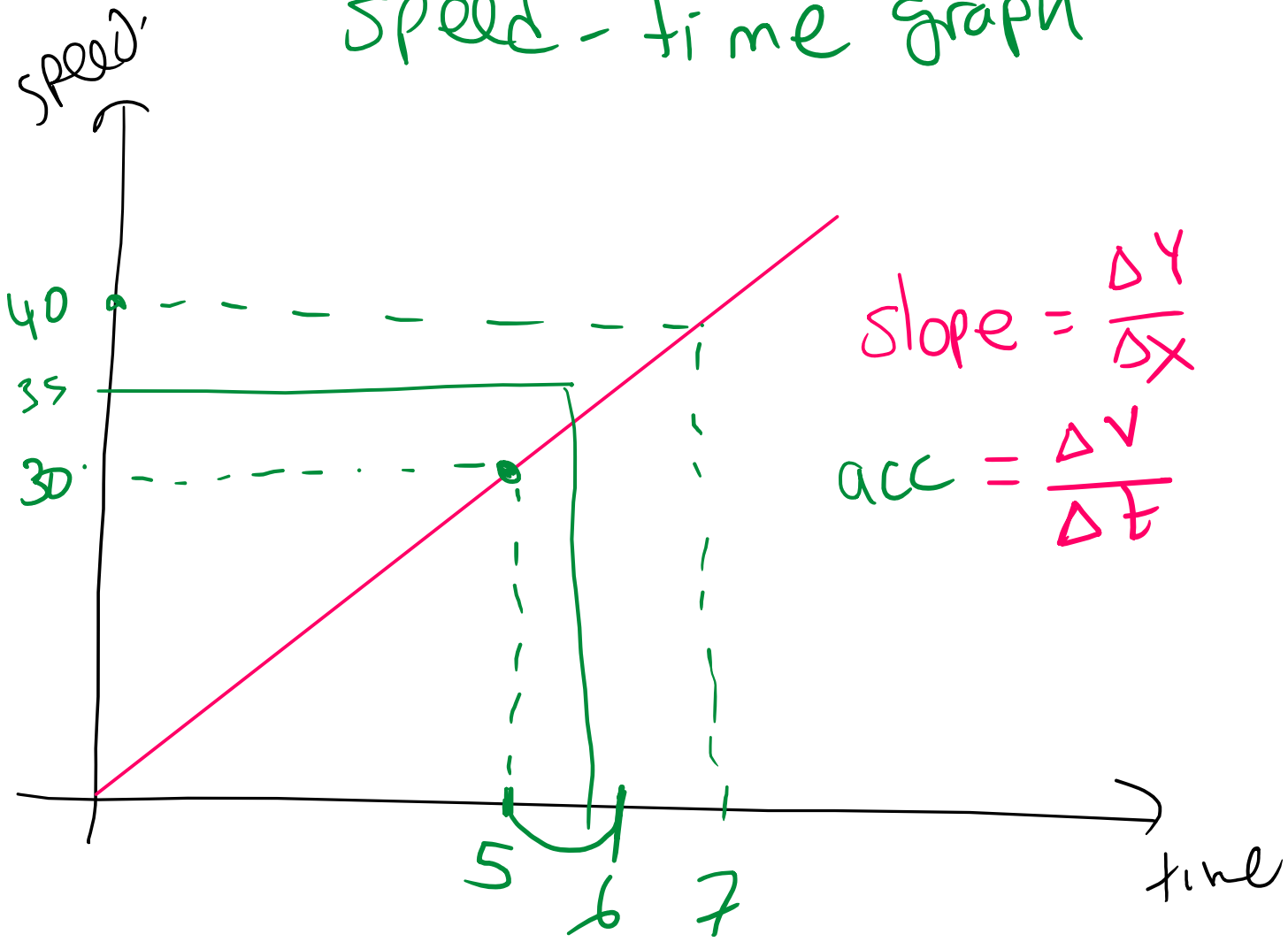
$$Sp_2 = \frac{20}{2} = 10\ m/s$$

$$Sp_3 = \frac{30}{3} = 10\ m/s$$

$$Sp_4 = \frac{40}{4} = 10\ m/s$$

Const speed

speed - time graph



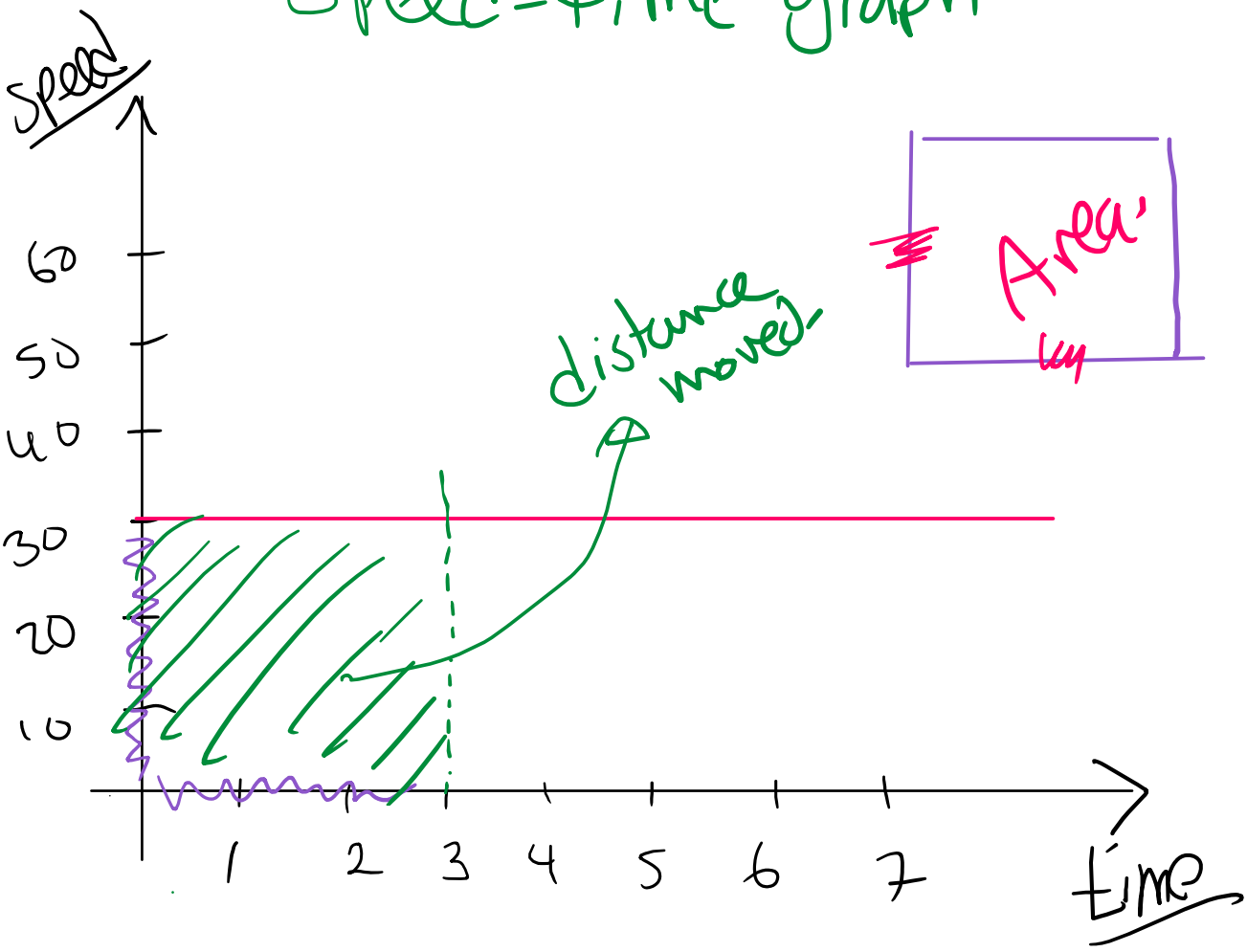
$$\text{slope} = \frac{\Delta y}{\Delta x}$$

$$\text{acc} = \frac{\Delta v}{\Delta t}$$

$$a = \text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{40 - 30}{7 - 5}$$

$$= \frac{10}{2} = 5\ m/s^2$$

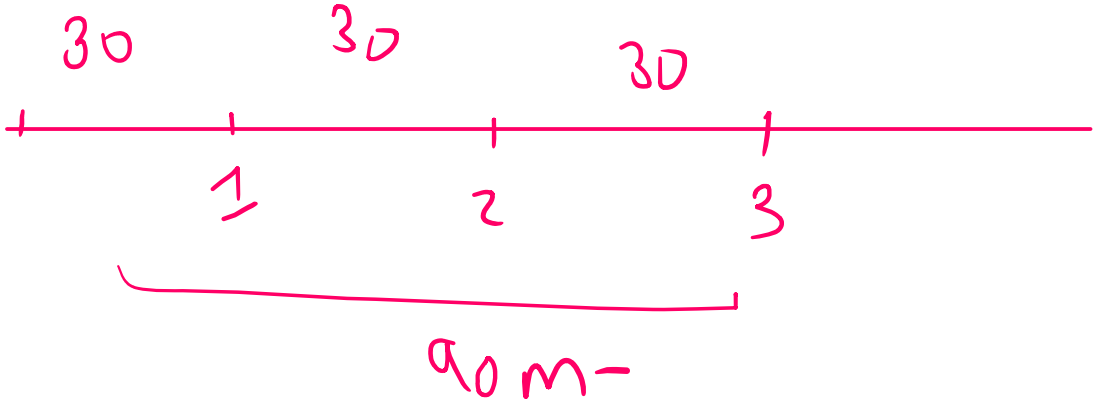
speed-time graph

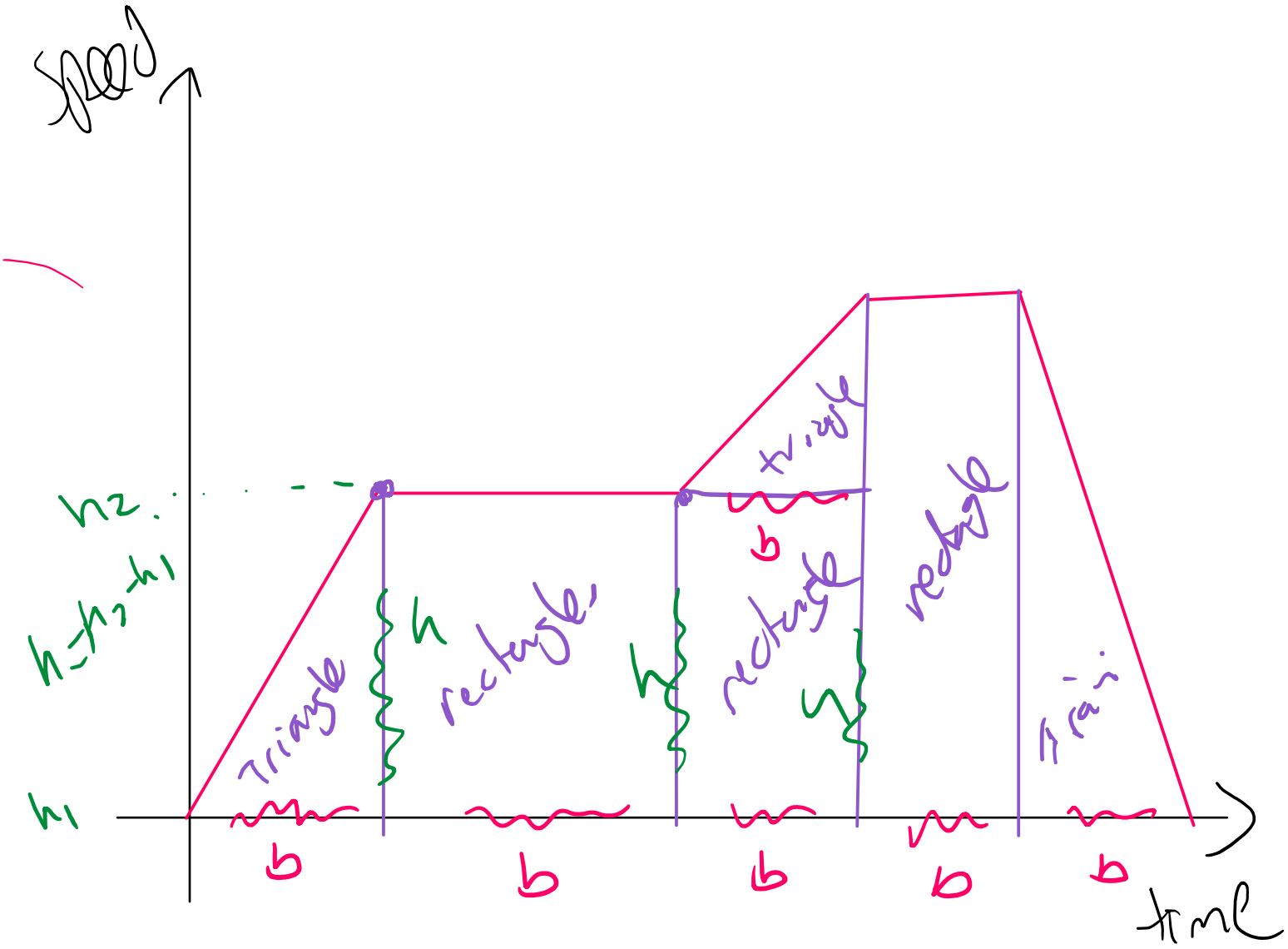


$S = \frac{d}{t}$

$d = S \times t$

$= 30 \times 3 = 90$ ✓





To get dist = Answer = Area under graph.

Area $\Delta = \frac{1}{2} b \times h$

Area $\square = b \times h$