

RK - 2

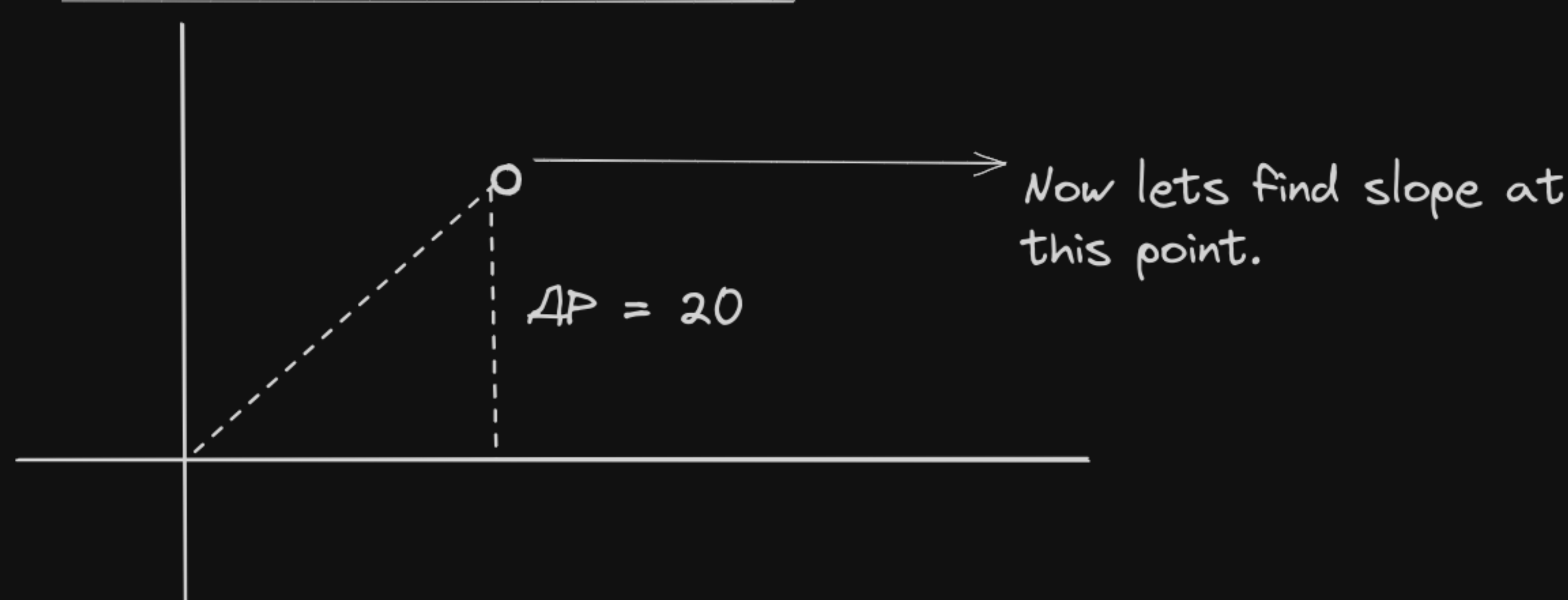
Taking Initial Population 100 at $\Delta t = 0$

Lets Find P at $\Delta t = 2$:

$$P(t = 2) = P(t = 0) + \Delta P$$

$\Delta P = \text{slope} * \Delta t$ -----> $\{\text{slope} = \Delta d / \Delta t = r.p, r \text{ is rate of growth} \}$ Slope = $0.1 * 100 \}$
 $\Delta P = 10 * 2 \Rightarrow 20$.
 $P(t = 2) = 100 + 20 = 120$.

Now lets this the ending slope

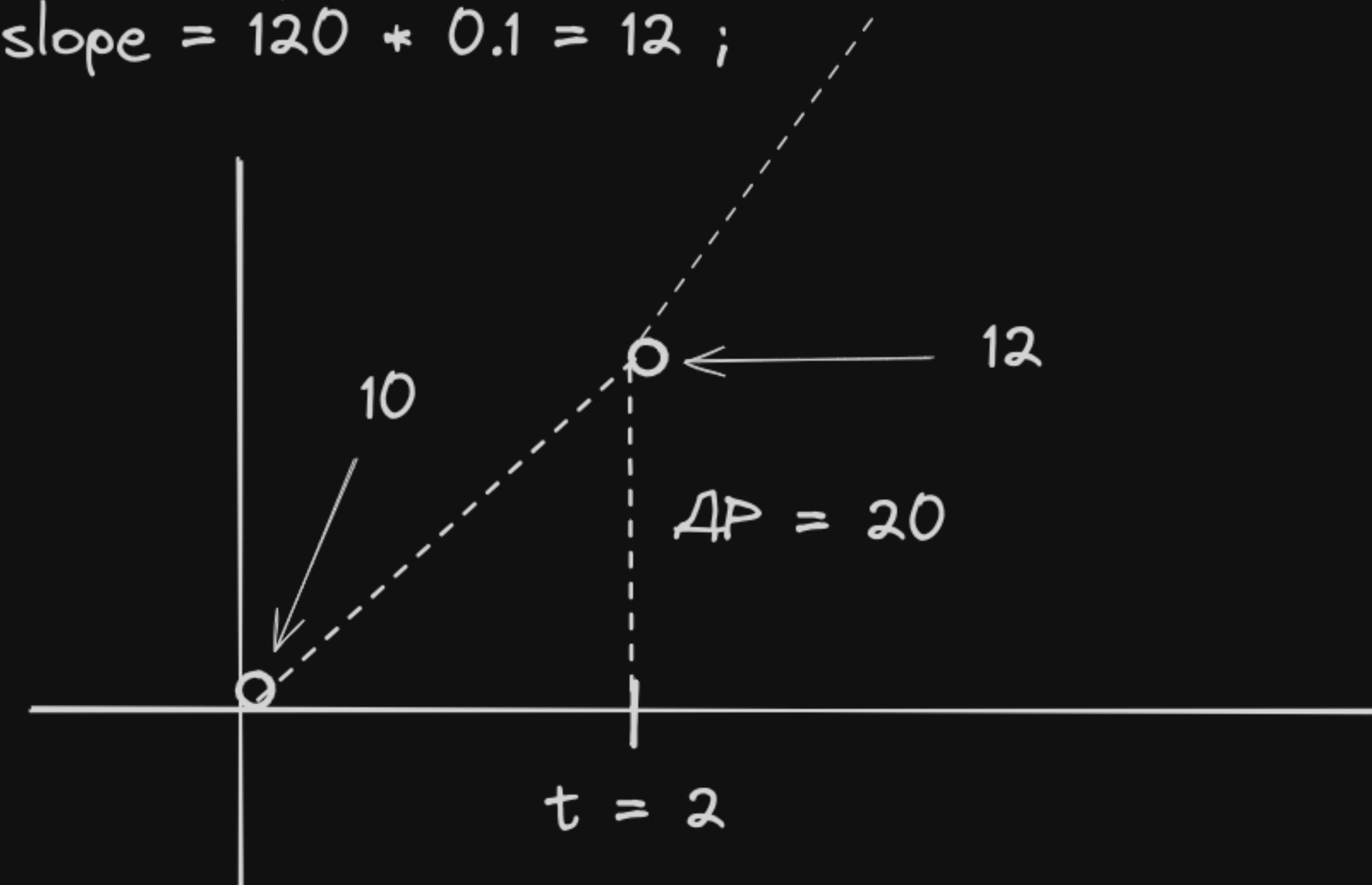


The Slope is r.p

$$P(t = 4) = P(t = 2) + \Delta P;$$

$$\Delta P = \text{slope} * \Delta t ;$$

$$\text{slope} = 120 * 0.1 = 12 ;$$



Now what we do is take avg of these two slopes:

Slope at $t = 0$ + slope at $t = 2$ / 2 = slope $\{\text{which now we'll to get our } P(t = 2) \}$

$$10 + 12 / 2 == 11$$

$$P(t = 2) = P(t = 0) + \Delta P$$

$$\Delta P = \text{slope} * \Delta t;$$

$$\Delta P = 11 * 2 \Rightarrow 22$$

$$P(t = 2) = 100 + 22 == 122$$

Lets Find P at $\Delta t = 4$:

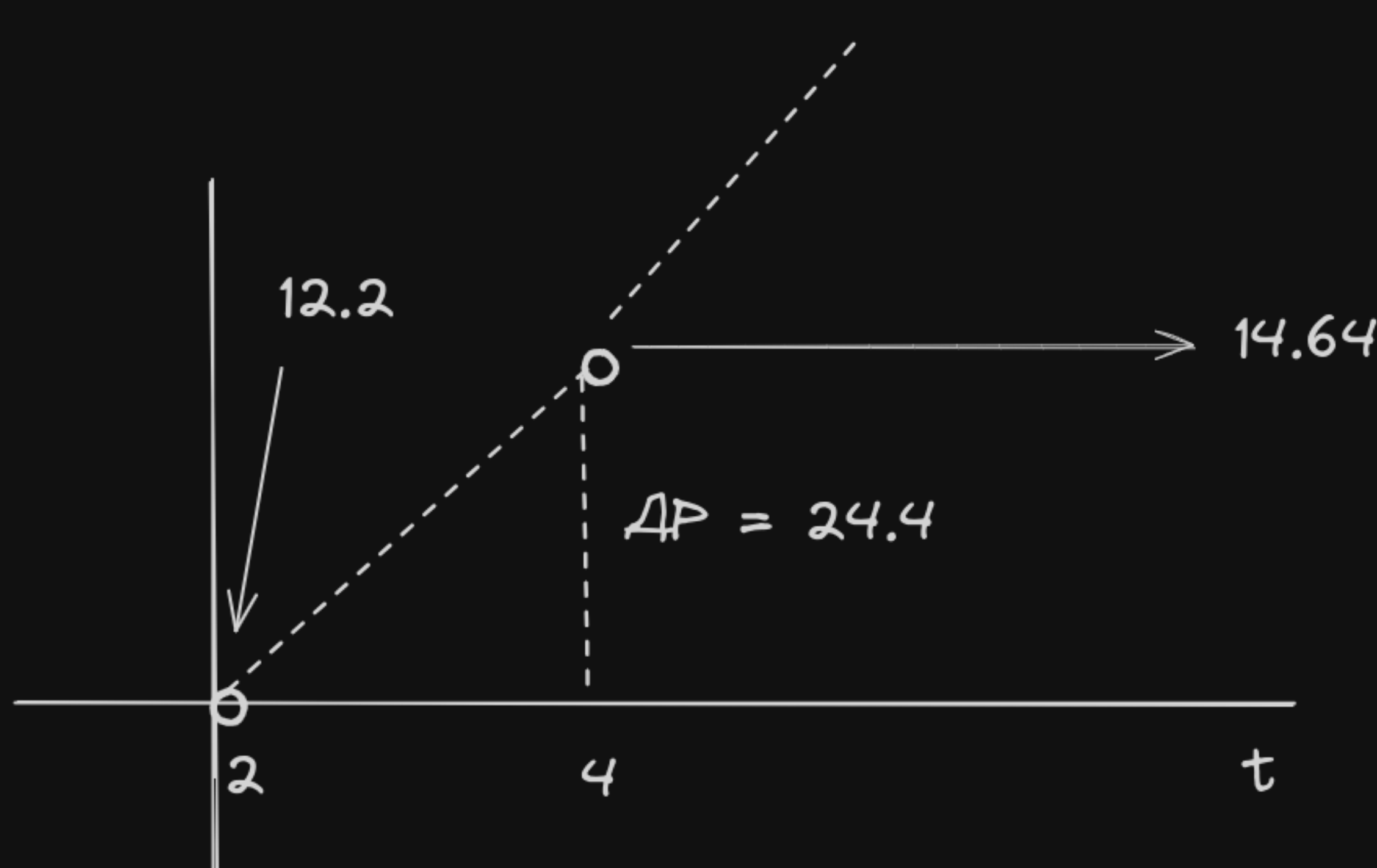
$$P(t = 4) = P(t = 2) + \Delta P$$

$$\Delta P = \text{slope} * \Delta t \text{ -----> Slope} = 0.1 * 122 = 12.2$$

$$\Delta P = 12.2 * 2 \Rightarrow 24.4.$$

$$P(t = 4) = 122 + 24.4 = 146.4.$$

$$\text{Slope} = r.p = 0.1 * 146.6 = 14.64$$



Now what we do is take avg of these two slopes:

Slope at $t = 2$ + slope at $t = 4$ / 2 = slope $\{\text{which now we'll to get our } P(t = 4) \}$

$$12.2 + 14.64 / 2 == 13.42$$

$$P(t = 4) = P(t = 2) + \Delta P$$

$$\Delta P = 13.42 * \Delta t;$$

$$\Delta P = 13.42 * 2 \Rightarrow 26.64$$

$$P(t = 4) = 122 + 26.64 == 148.64$$

Lets Find P at $\Delta t = 6$;

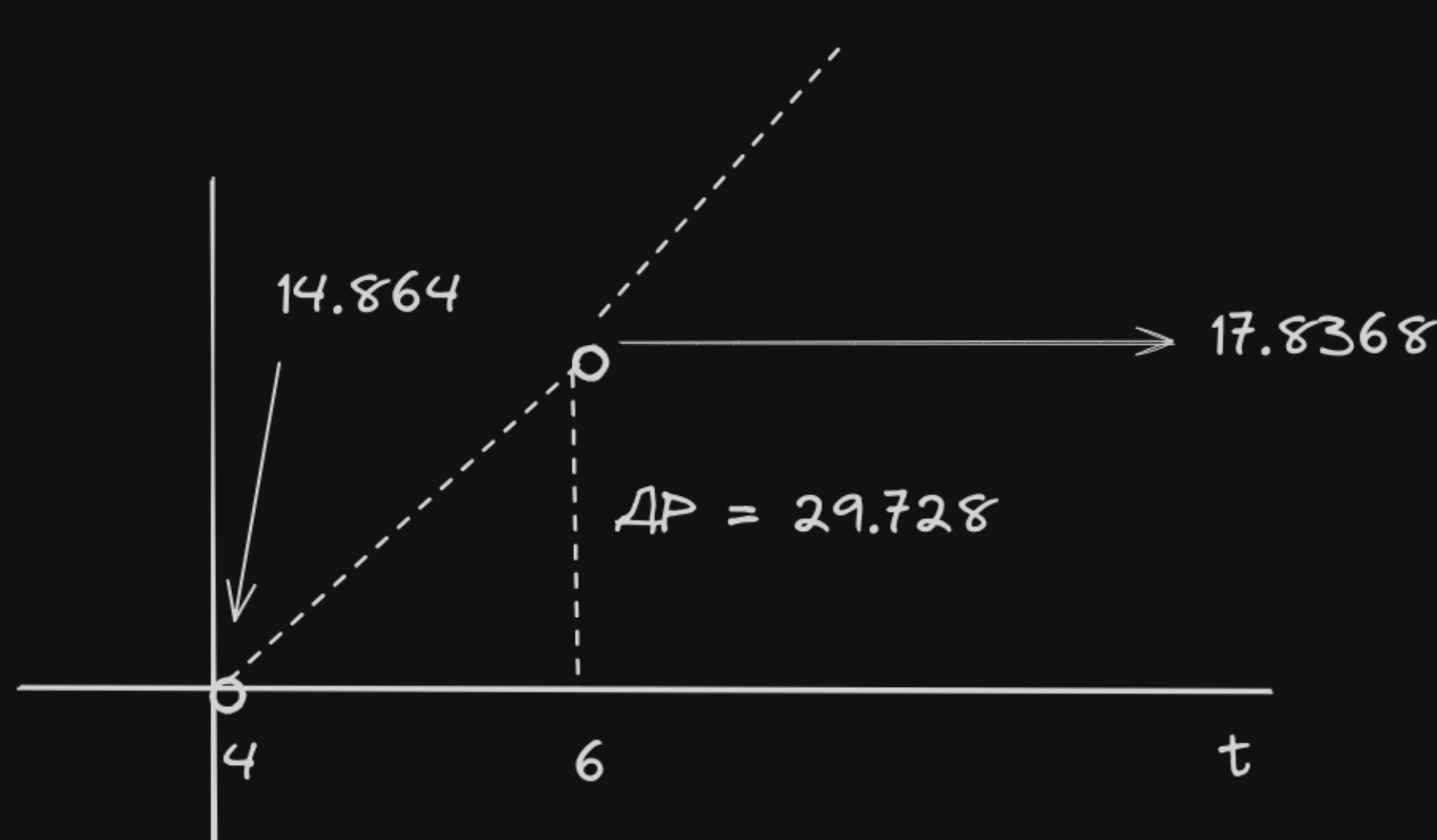
$$P(t = 6) = P(t = 2) + \Delta P$$

$$\Delta P = \text{slope} * \Delta t \text{ -----> Slope} = 0.1 * 148.64 = 14.864$$

$$\Delta P = 14.864 * 2 \Rightarrow 29.728 ;$$

$$P(t = 4) = 148.64 + 29.728 = 178.368 ;$$

$$\text{Slope} = r.p = 0.1 * 178.368 = 17.8368$$



Now what we do is take avg of these two slopes:

Slope at $t = 4$ + slope at $t = 6$ / 2 = slope $\{\text{which now we'll to get our } P(t = 6) \}$

$$14.64 + 17.8368 / 2 == 16.2384$$

$$P(t = 6) = P(t = 4) + \Delta P$$

$$\Delta P = 16.2384 * \Delta t;$$

$$\Delta P = 16.2384 * 2 \Rightarrow 32.4768$$

$$P(t = 6) = 148.64 + 32.4768 == 181.1168$$