$t = 1$

$t = 2$

PRODUCTIVITY

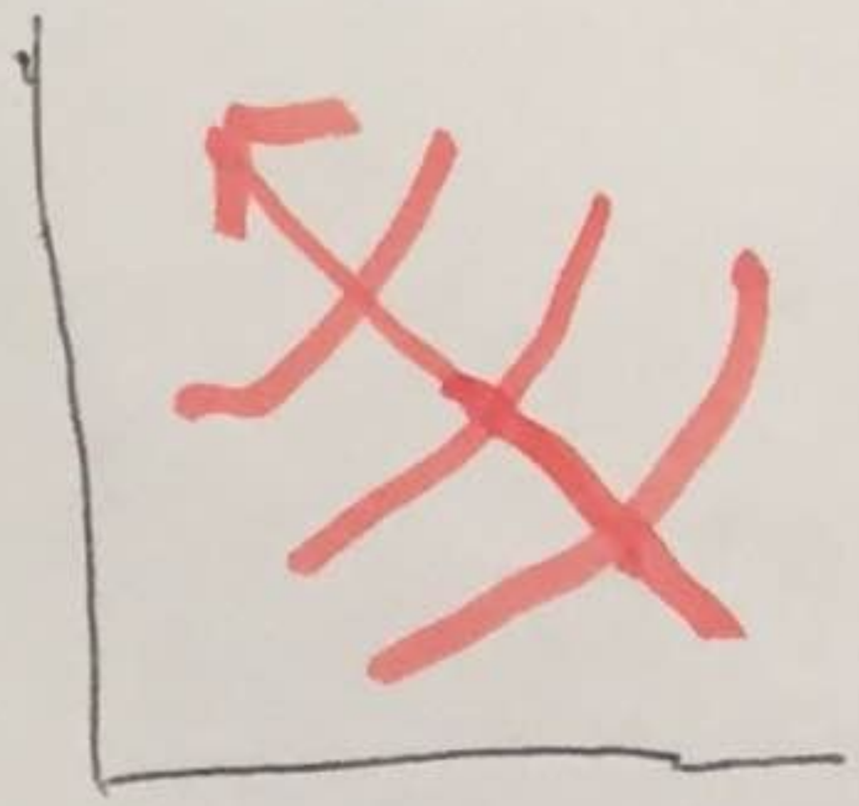
$e \longrightarrow te$

time (effort) — dollars (worth of output)

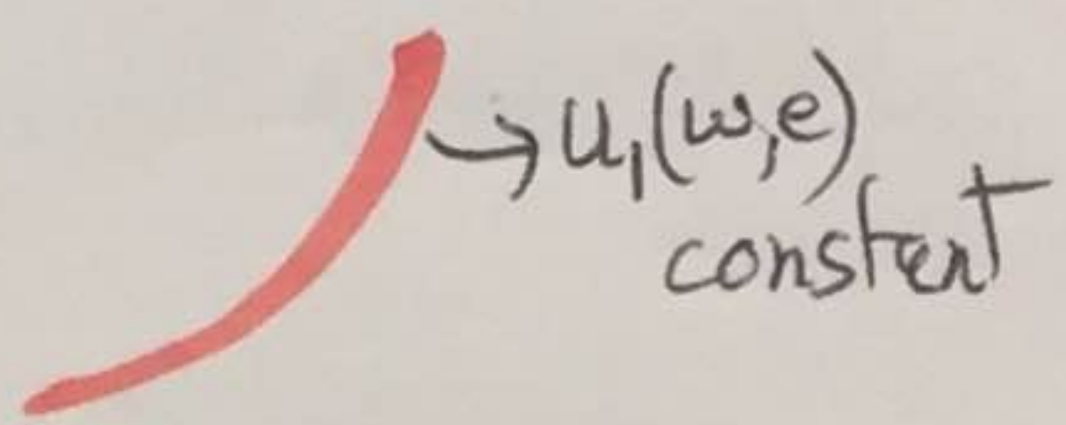
$e \in E = [0, 16]$

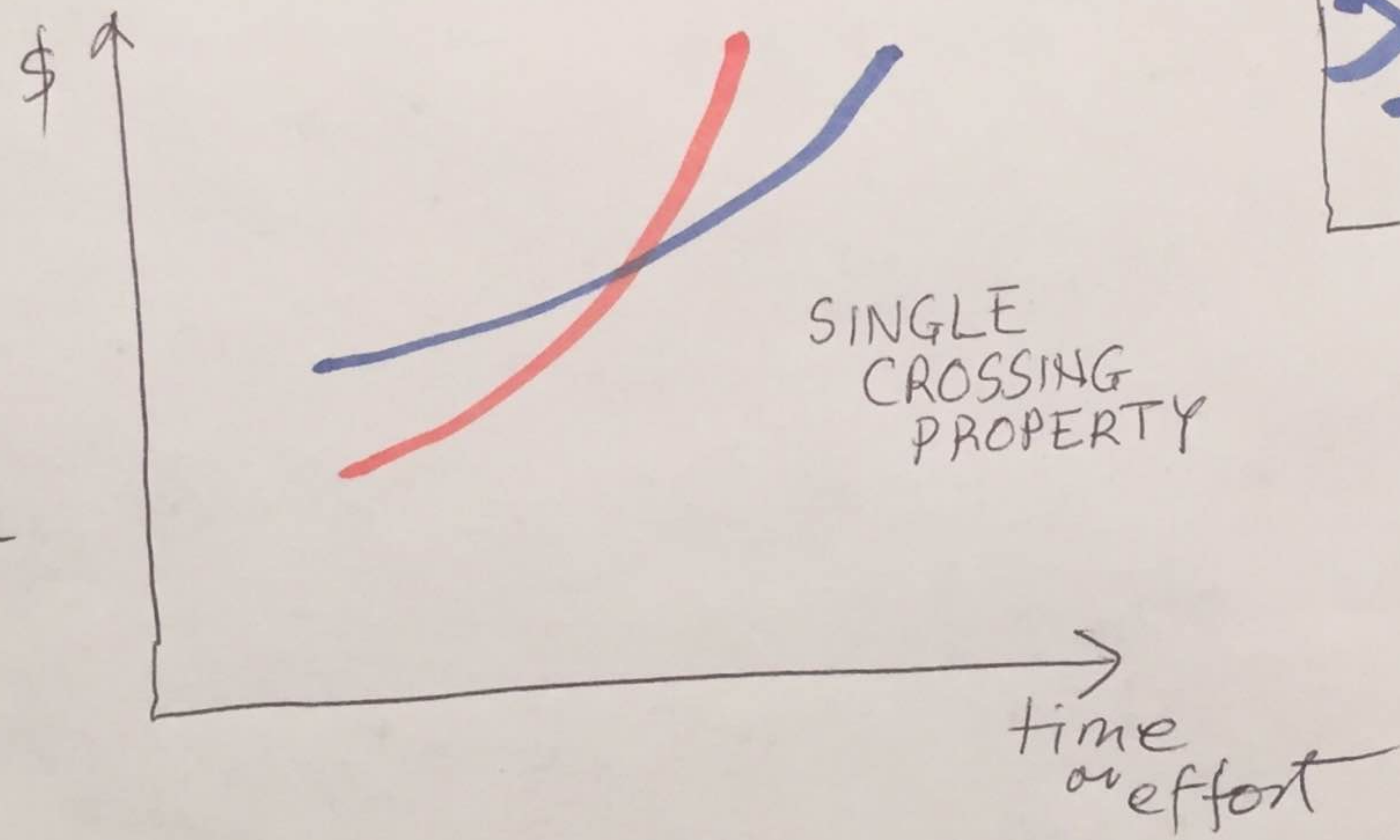
$e \rightarrow e$

$e \rightarrow 2e$

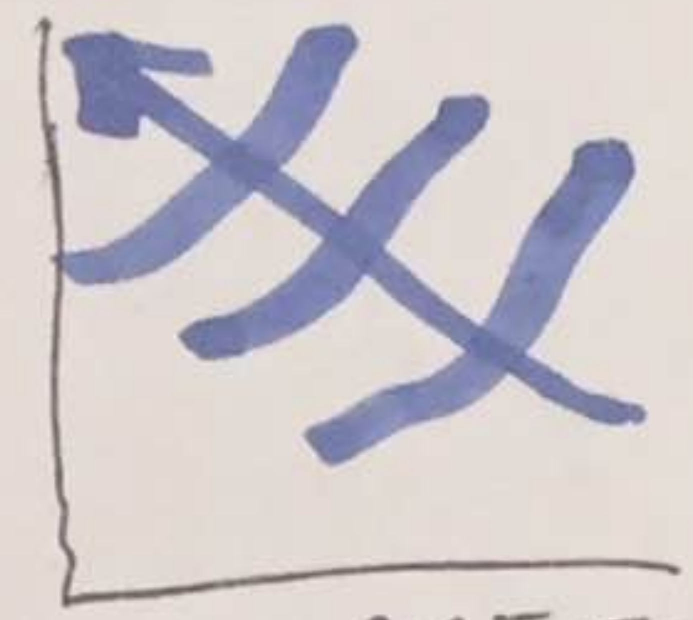


PREFERENCES



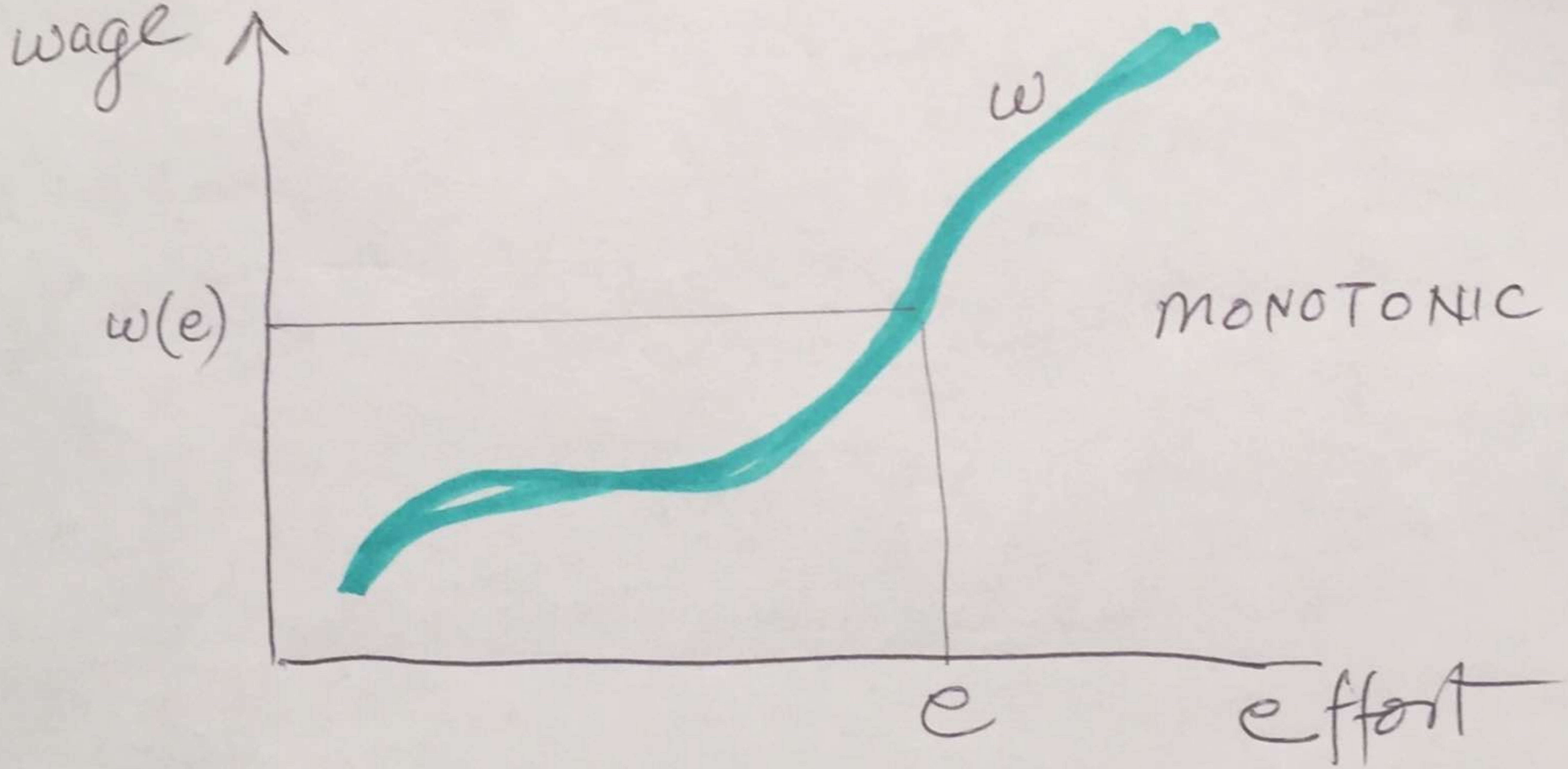


SINGLE CROSSING PROPERTY



PREFERENCES

Anticipated Wage Function
(Created by Competing Employers)



1

$N_1 = \alpha N$

2

$N_2 = (1-\alpha)N$

Let $N = N_1 + N_2$

$$\alpha = \frac{N_1}{N}, \quad 1-\alpha = \frac{N_2}{N}$$

EQUILIBRIUM wage function ω, and probability distributions π_1, π_2 on E such that

$\pi_t(e)$ = fraction of N_t that is choosing e

DEF^n $\langle \omega, \pi_1, \pi_2 \rangle$ is an equilibrium if

(1) $$\boxed{\pi_1(e) + \pi_2(e) > 0 \Rightarrow}$$

MONEY PAID AS WAGES AT e = MONEY PRODUCED BY ALL WHO CHOSE e

FIRMS MAKE 0 profit

$$\left[\pi_1(e)\alpha N + \pi_2(e)(1-\alpha)N\right]\omega(e) = \pi_1(e)\alpha N e + \pi_2(e)(1-\alpha)N\,2e$$

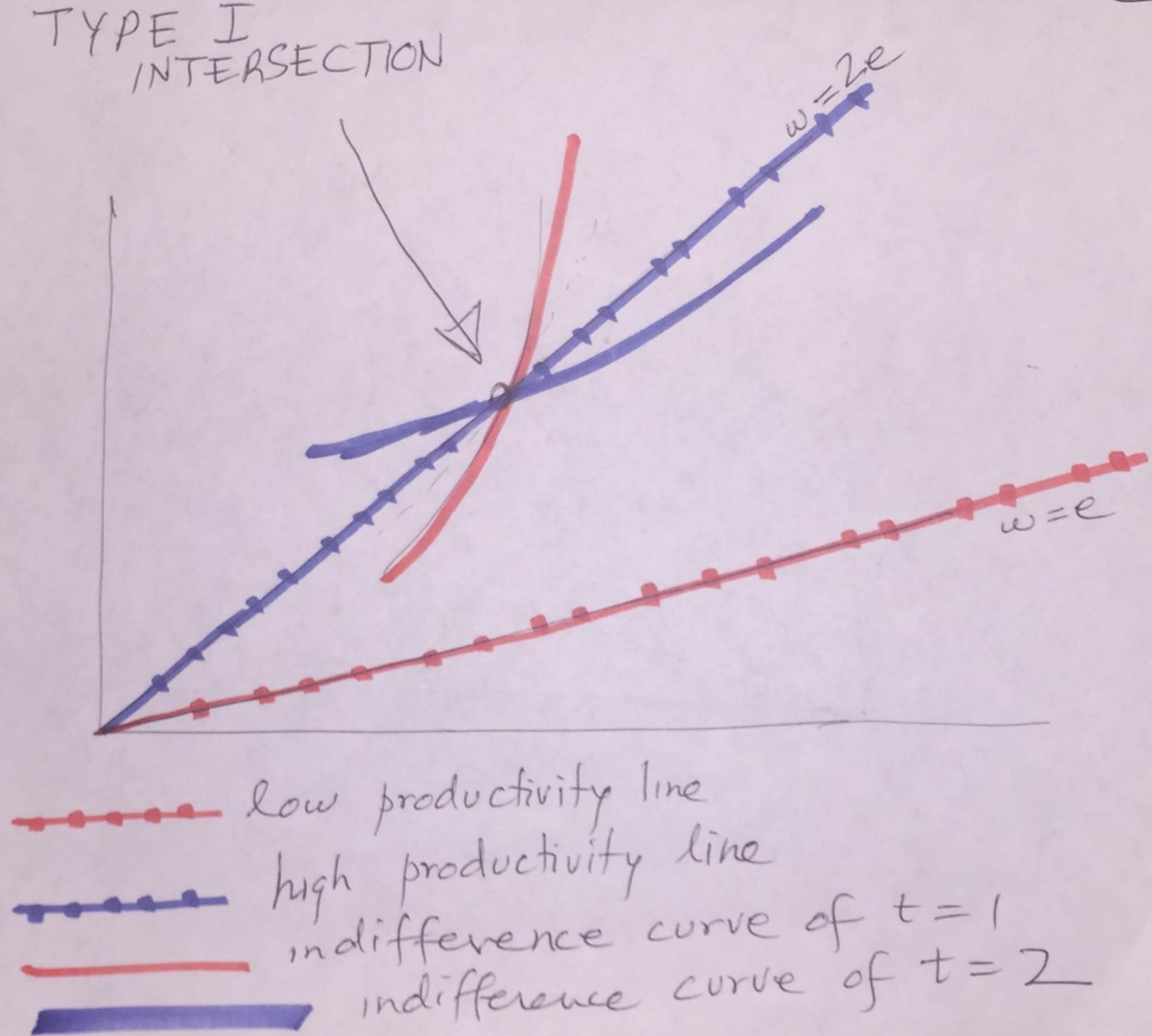
i.e

$$\boxed{\omega(e) = \frac{\alpha\pi_1(e)e + (1-\alpha)\pi_2(e)\,2e}{\alpha\pi_1(e) + (1-\alpha)\pi_2(e)}}$$

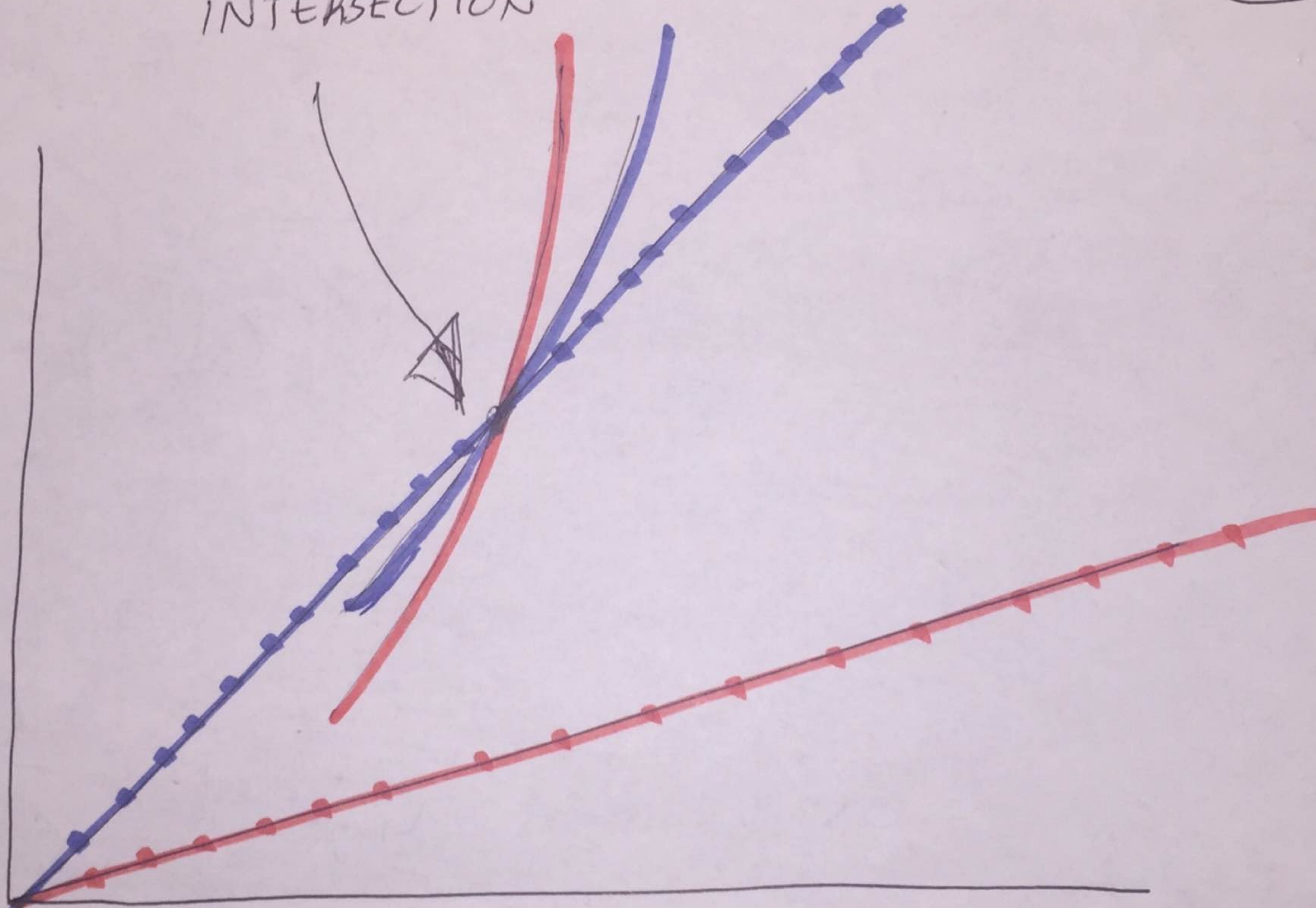
(2) $$\boxed{\pi_t(e) > 0 \Rightarrow u_t(\omega(e), e) = \max_{\tilde{e}\in E} u_t(\omega(\tilde{e}), \tilde{e})}$$

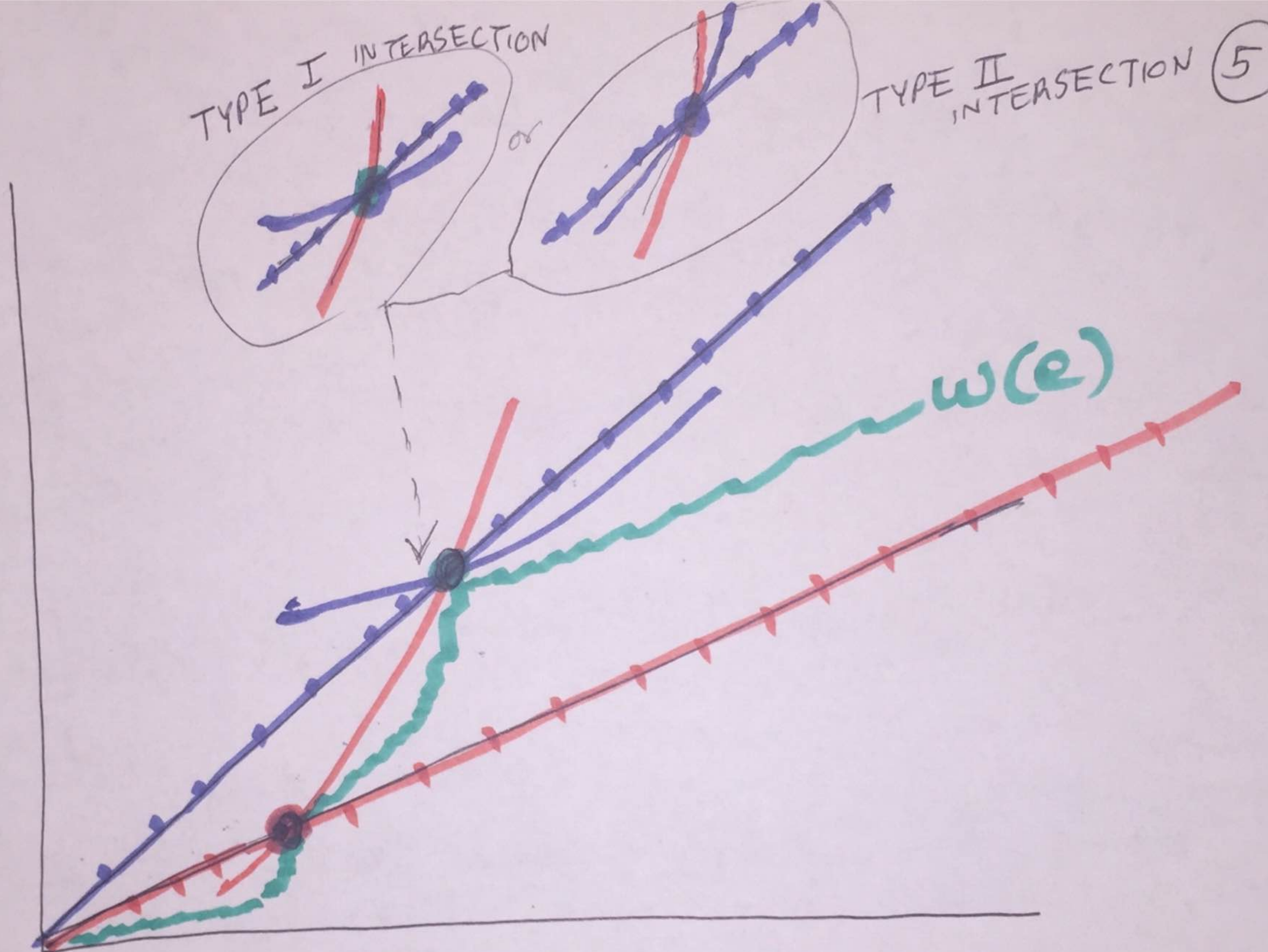
OPTIMAL CHOICE of e

SOME TERMINOLOGY

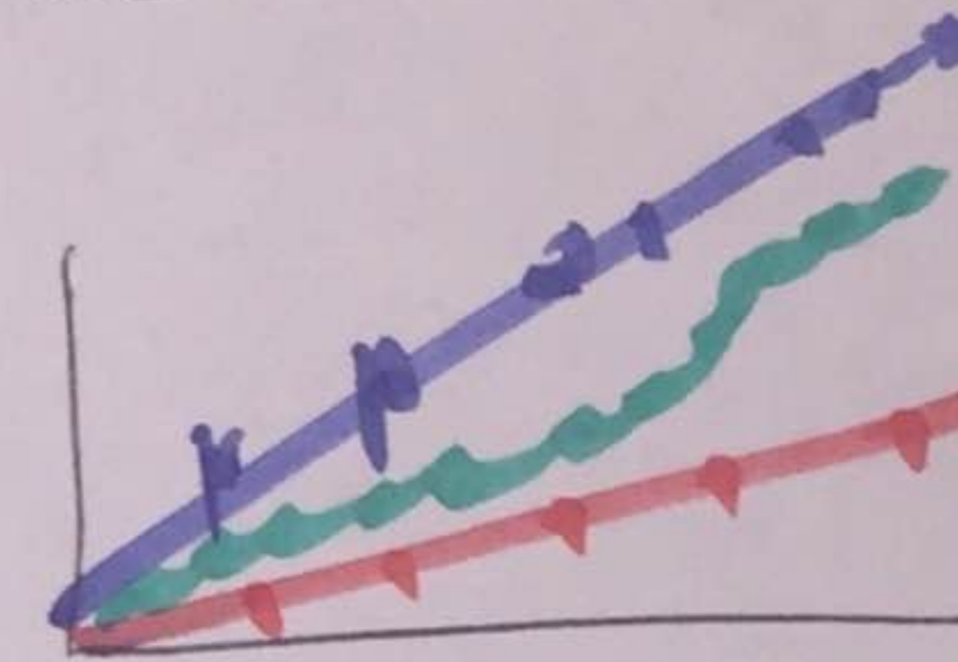


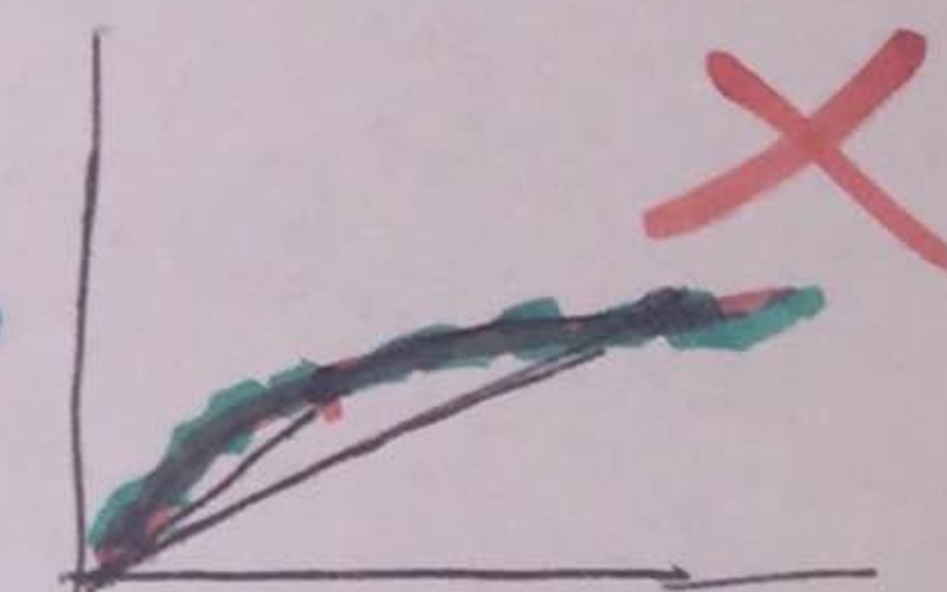
TYPE II
INTERSECTION




TYPE I INTERSECTION
or
TYPE II INTERSECTION
5
w(e)

CONSTRAIN wage function w to satisfy

1. $\boxed{e \le w(e) \le 2e}$ $\longrightarrow$ 

2. $\boxed{\dfrac{w(e)}{e} \nearrow \text{ with } e}$ $\longrightarrow$ 

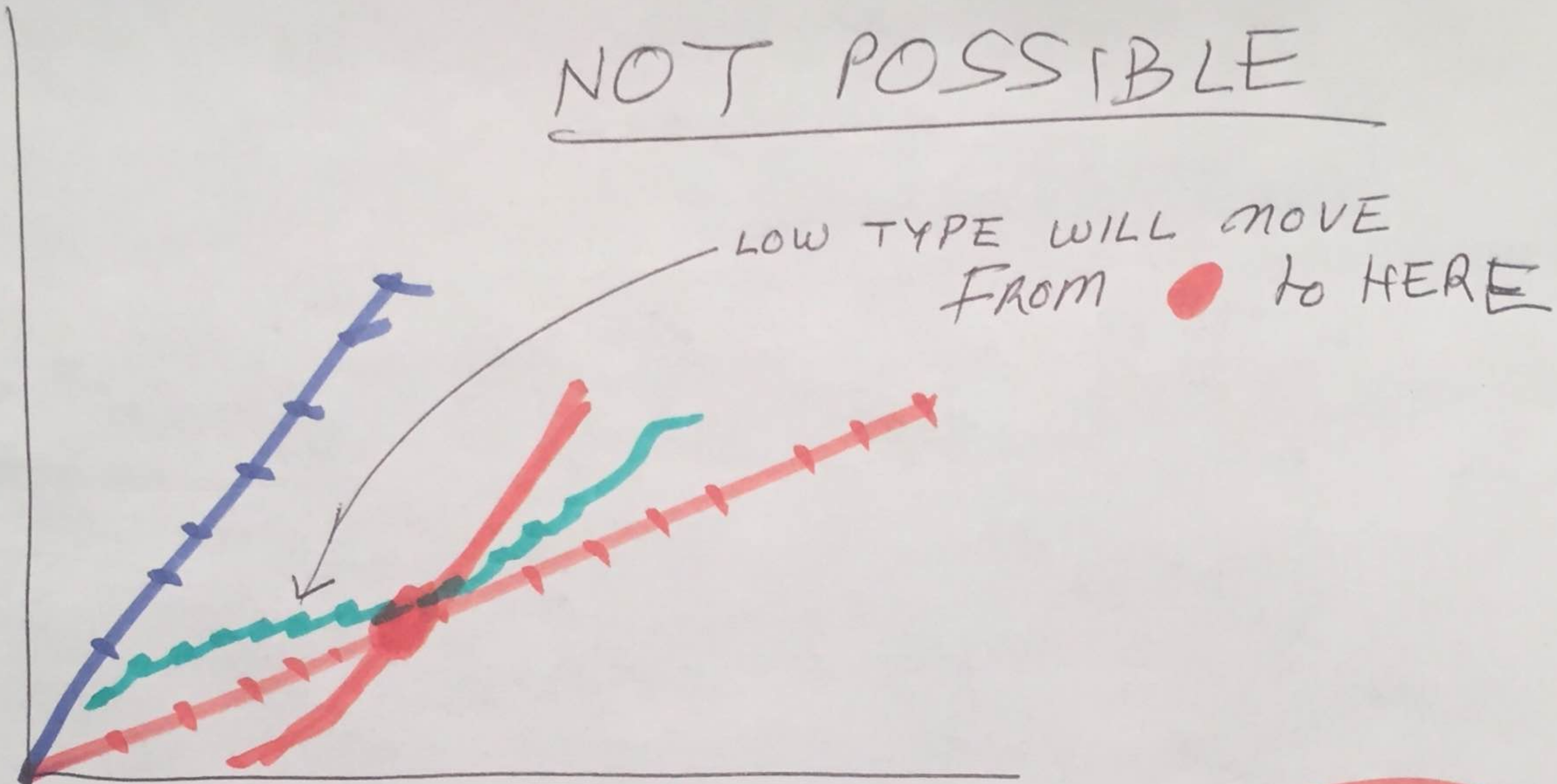
eg. $\alpha(e)$ = fraction of workers of type 1 at e is ~~↑~~ ↓ as e ↑

So $w(e) = \alpha(e)e + (1-\alpha(e))2e$

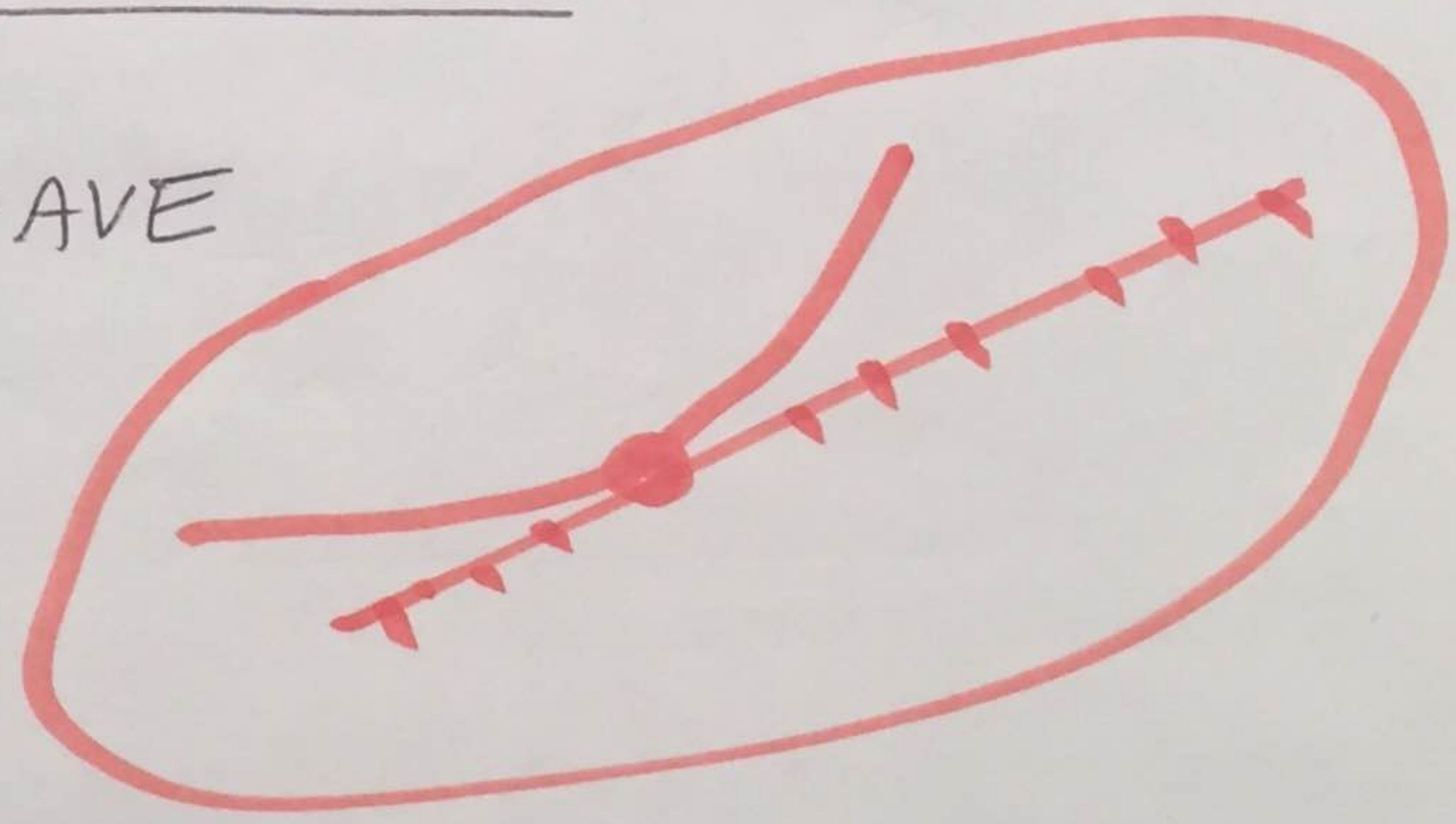
$= \cancel{2(e)}\, e\,[2-\alpha(e)]$

i.e. $\dfrac{w(e)}{e} = 2-\alpha(e)$ ↑ as e ↑

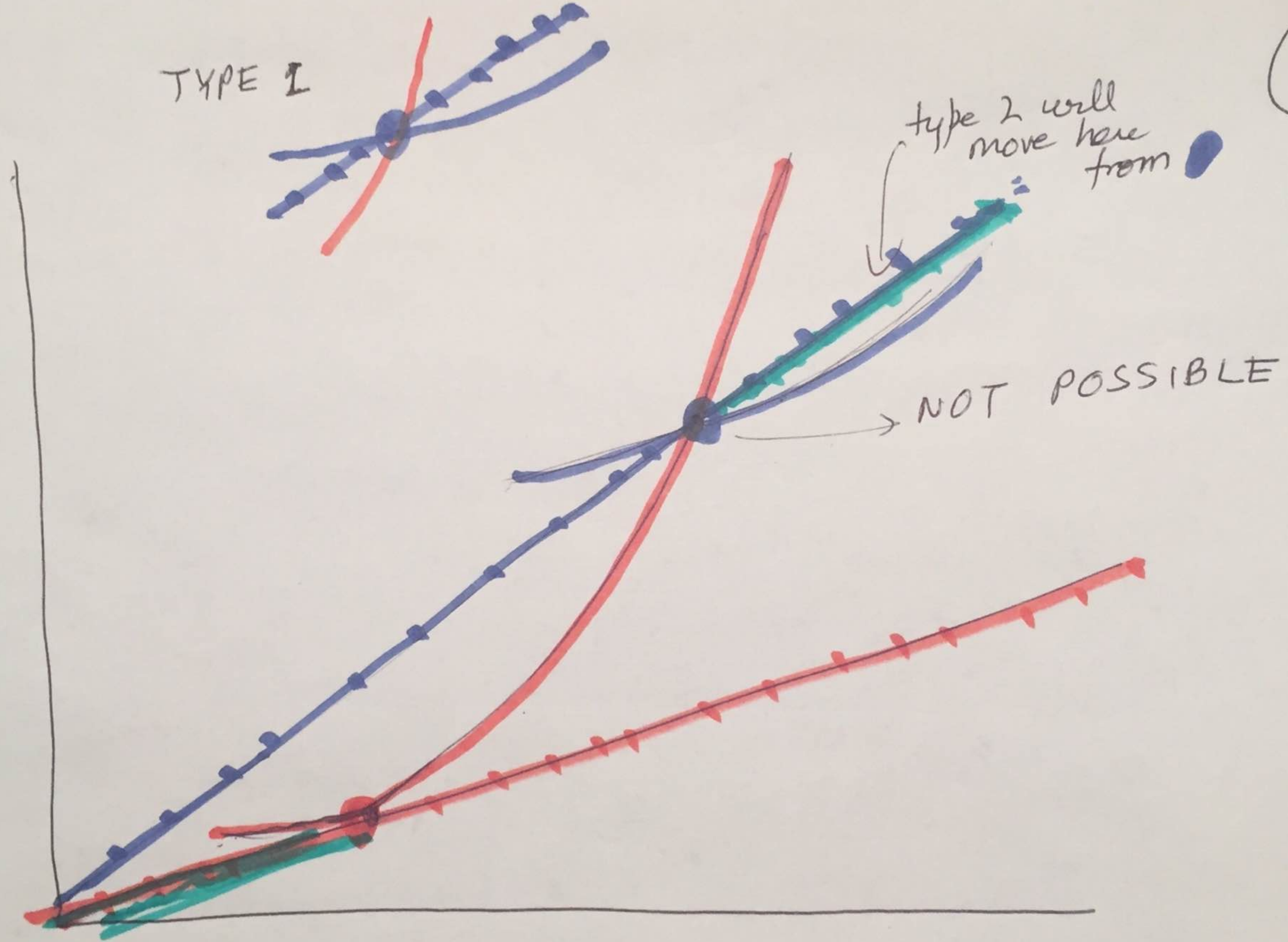
NOT POSSIBLE

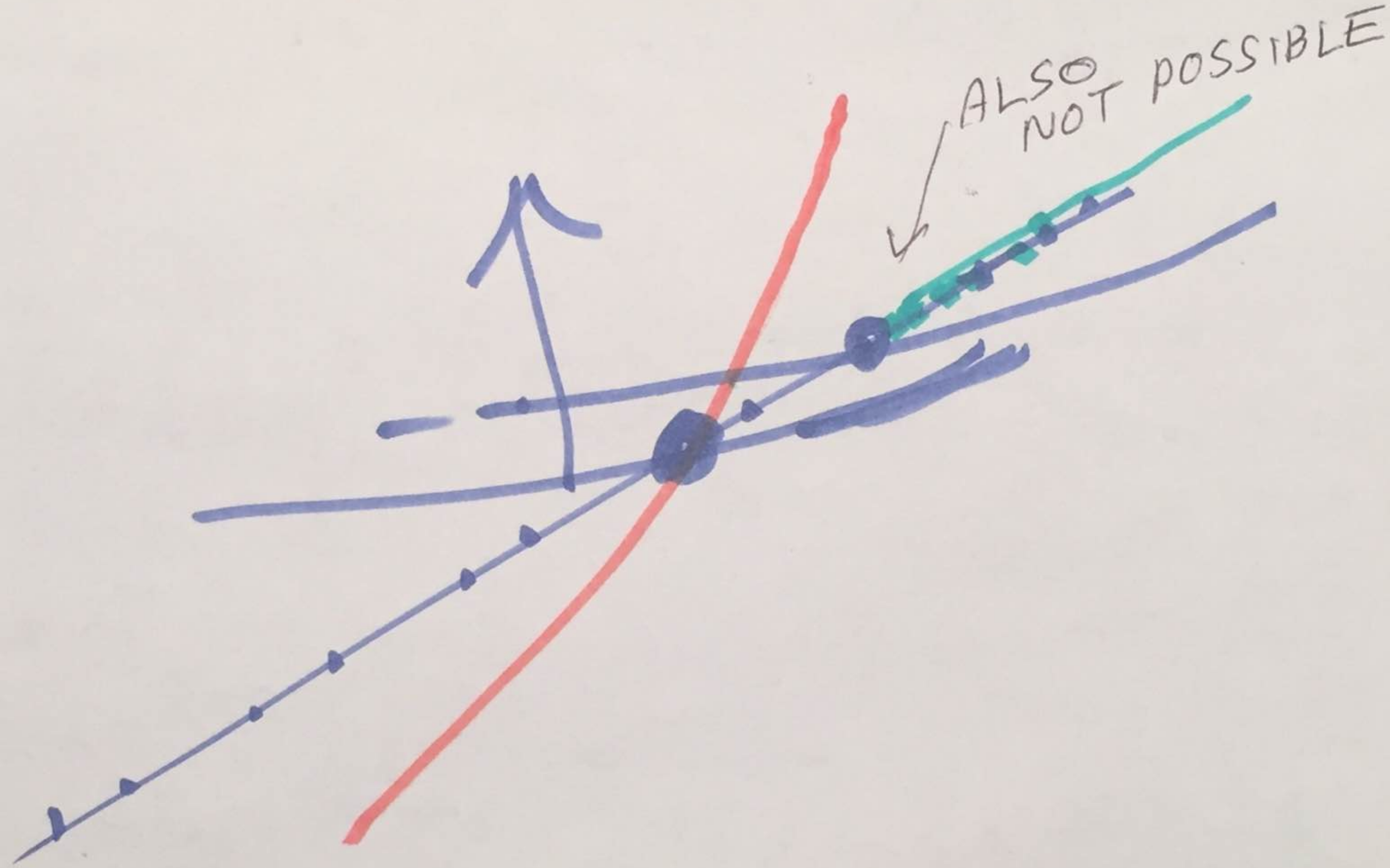


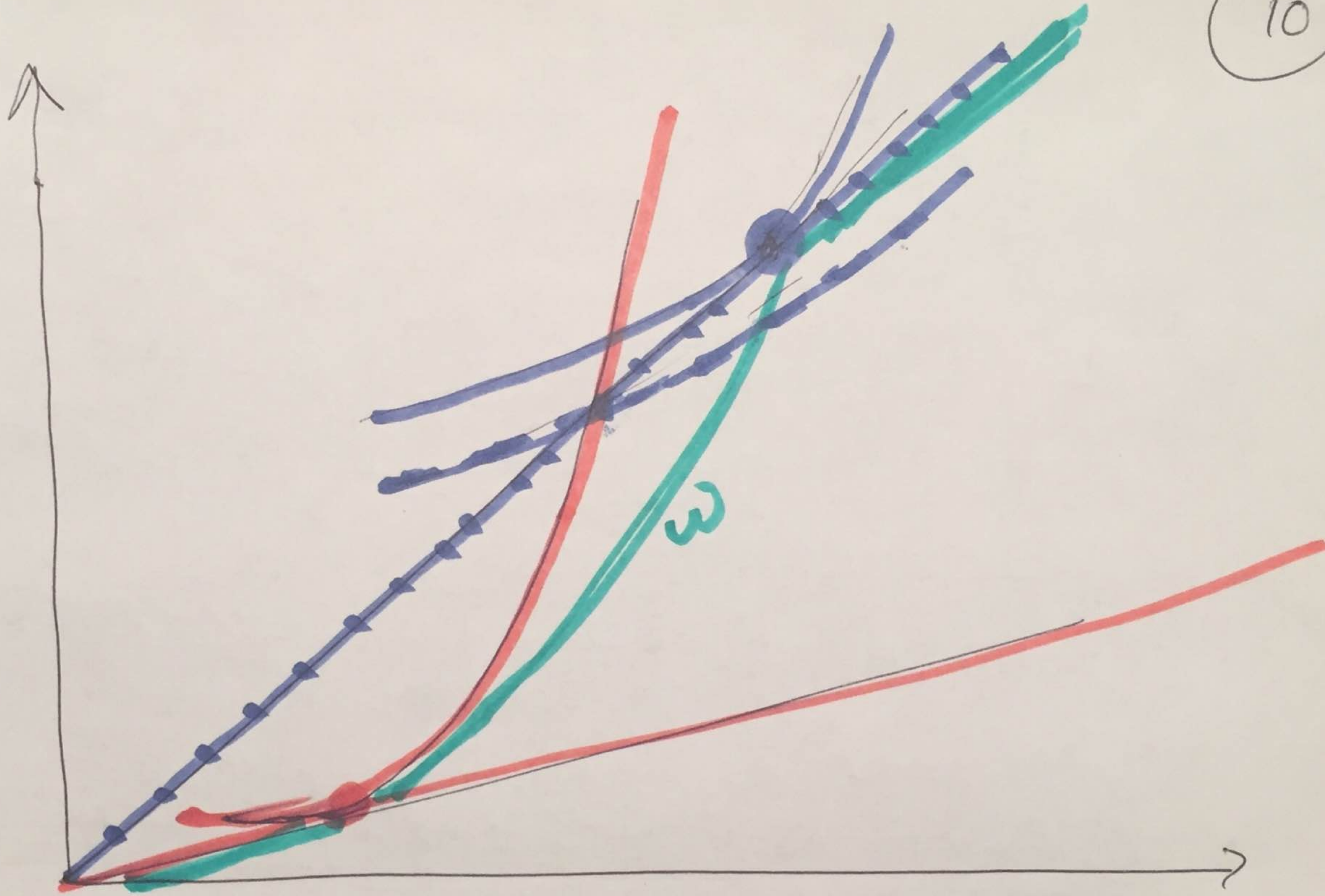
SO MUST HAVE



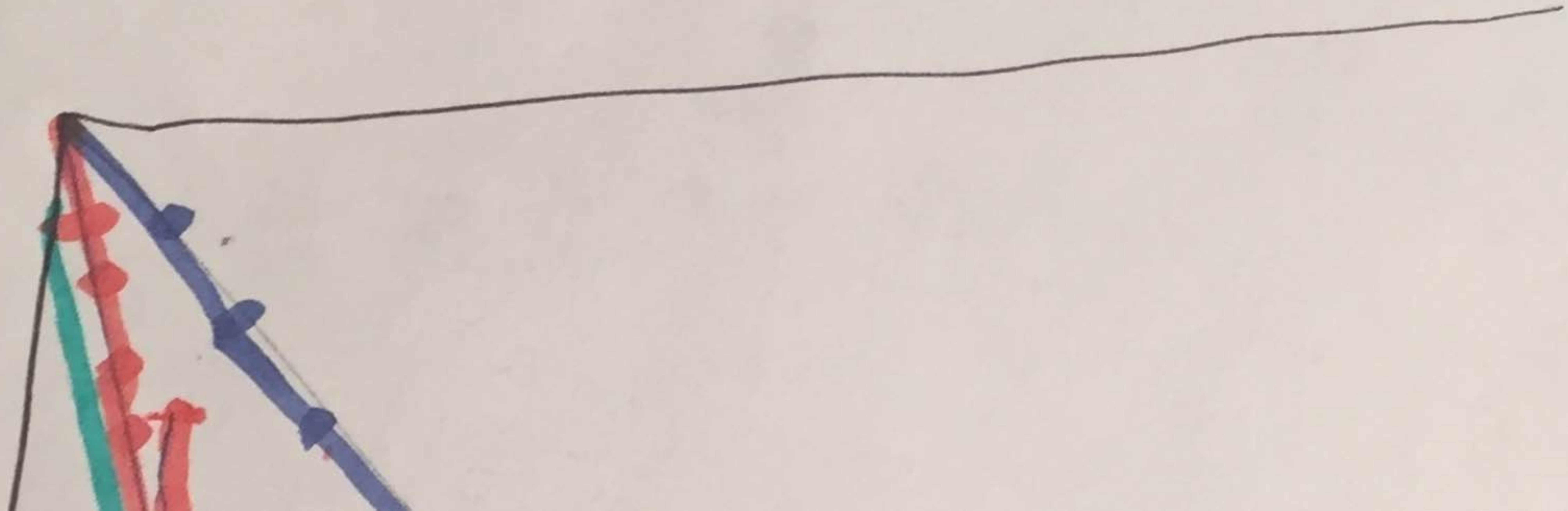
8




ALSO
NOT POSSIBLE

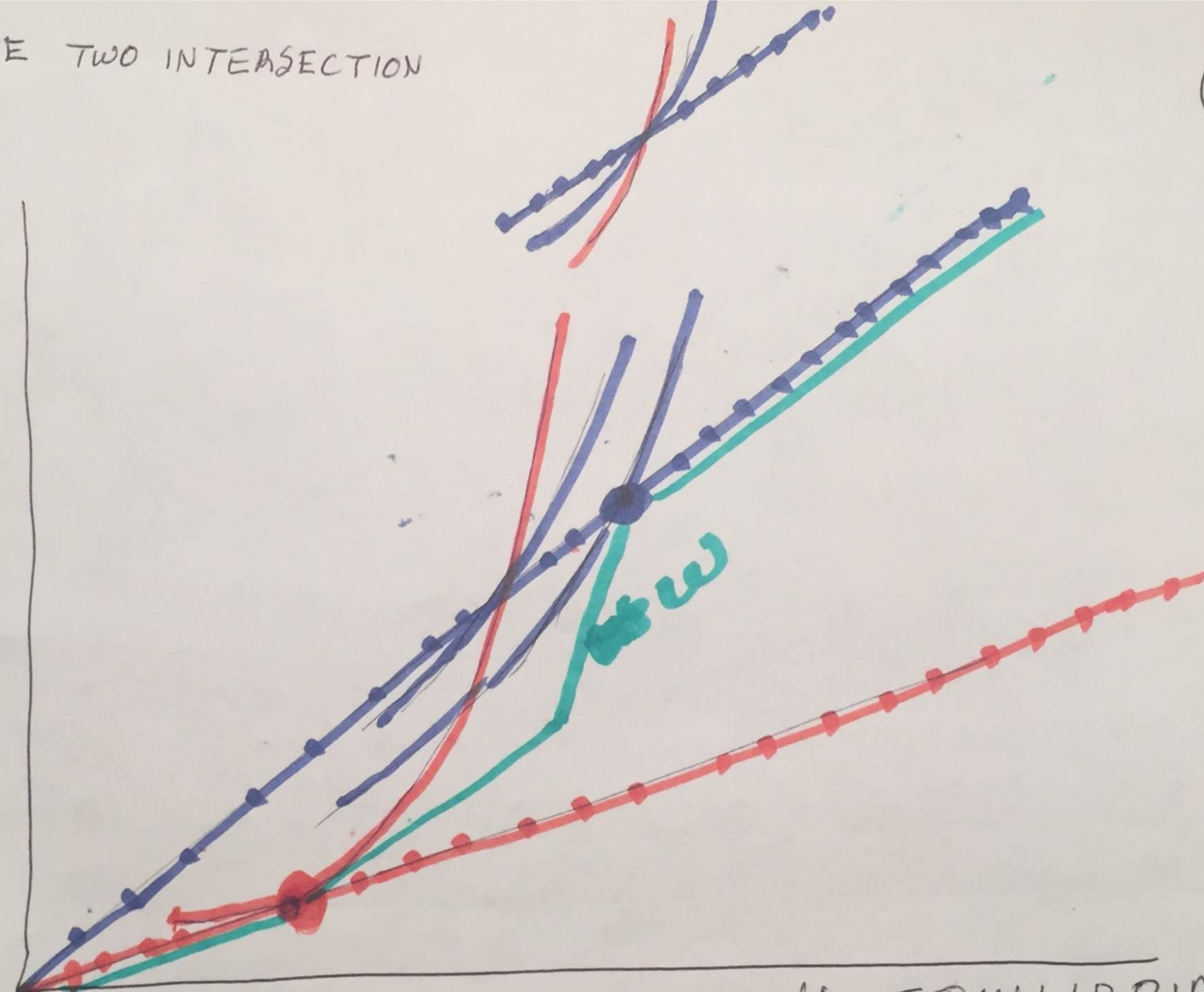


SEPARATING EQ^{m}



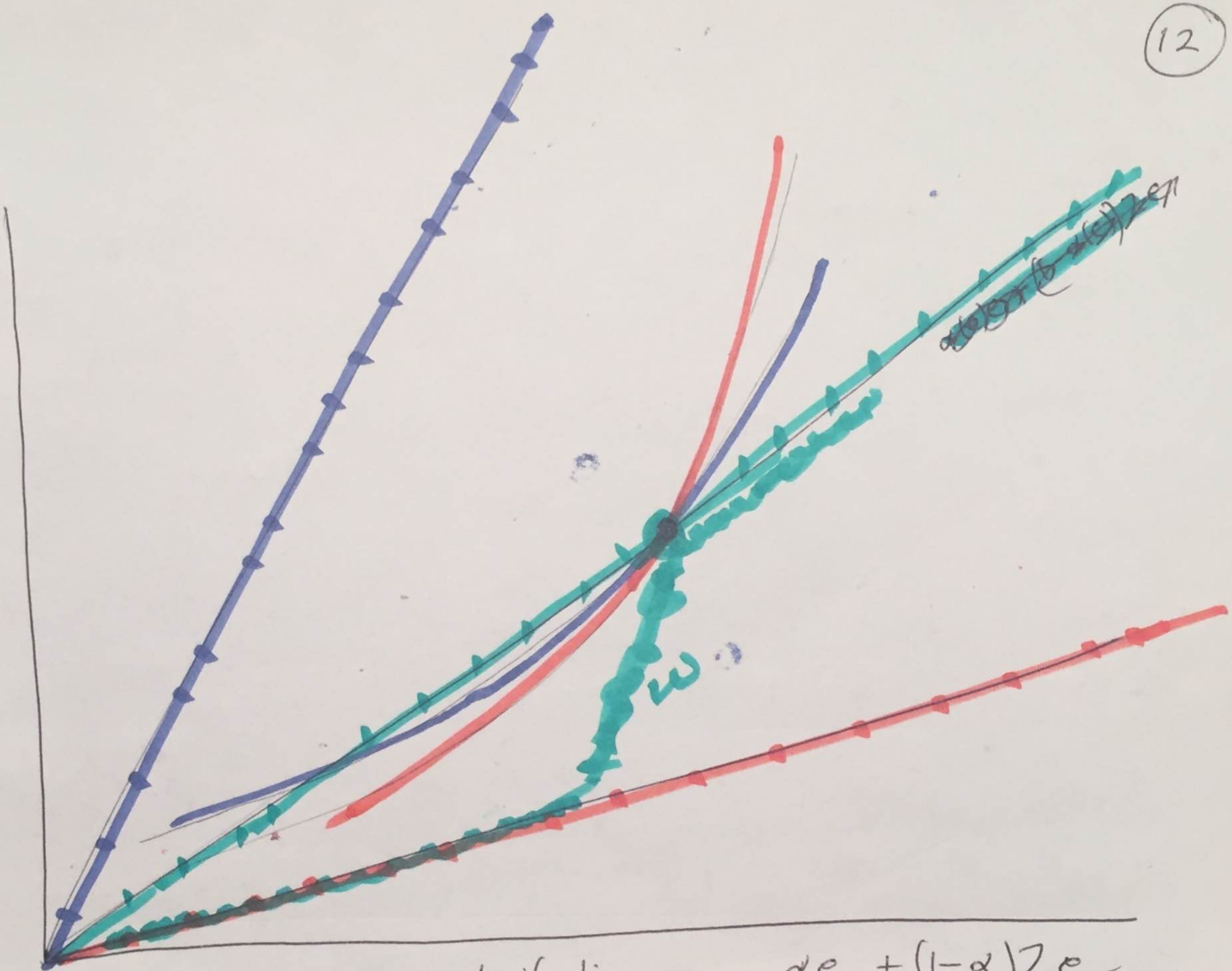
TYPE TWO INTERSECTION

11



MANY SEPARATING EQUILIBRIA

BY VARYING



= average productivity line = $\alpha e + (1-\alpha)Ze$

(MANY) POOLING EQ^m