

Production and costs: wage = 2000

optional (forms plant) rent = 1000.

L Q MP_L AP_L TVC MC AVC TFC AFC TC ATC

0	0	10	0	0	$\frac{2000}{10}$	0	1000	0	1000	0
1	10	15	10	2000	$\frac{2000}{10}$	$\frac{1000}{10}$	2000	$\frac{1000}{10}$	3000	$\frac{3000}{10}$
2	25	5	12.5	4000	$\frac{2000}{25}$	$\frac{1000}{25}$	1000	$\frac{1000}{25}$	5000	$\frac{5000}{25}$
3	30	↑	10	6000	$\frac{2000}{30}$	$\frac{1000}{30}$	1000	$\frac{1000}{30}$	7000	$\frac{7000}{30}$

midway.

L: labor

Specialization \Rightarrow increase in productivity.

Q: output/total product

AP_L \uparrow \downarrow : Labor \uparrow but other resource (e.g.

MP_L: marginal production of labor.

machine) is fixed.

AP_L: average

TVC: total variable cost.

MC: marginal cost. \Rightarrow $\frac{\text{increase in cost}}{\text{increase in output}}$

AVC: average

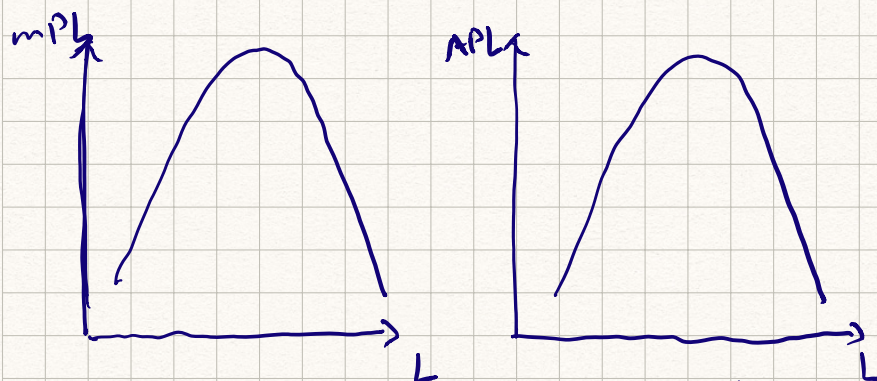
TFC: total fixed cost.

AFC: average \Rightarrow $\frac{\text{total fixed cost}}{\text{production}}$.

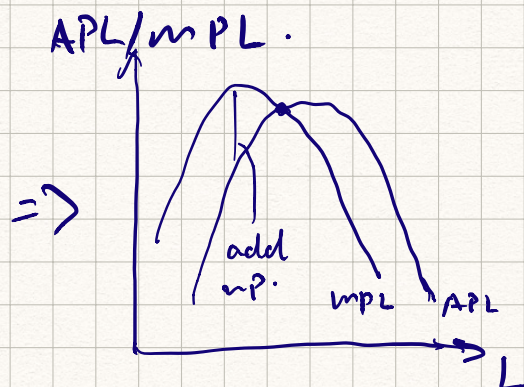
TC: TVC + TFC

ATC = $\frac{TC}{Q}$.

if $MP > AP \Rightarrow$ the add up will increase the AP.

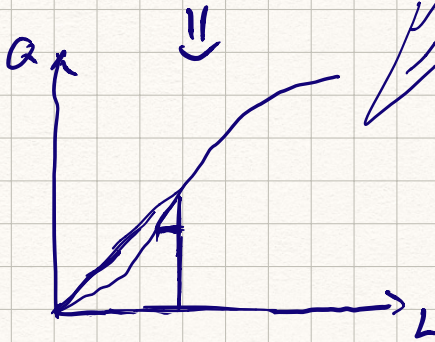


where it eventually



the add up: $\uparrow \downarrow$

goes down to is the initial fix plant.



$MP \downarrow \neq AP \downarrow$

as long as $MP > AP$,
 $LT \Rightarrow AP \uparrow$.

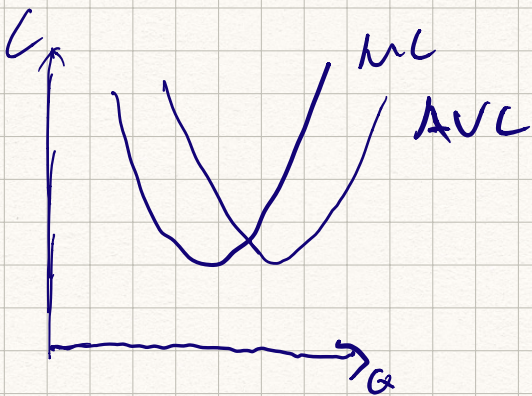
$k = MPL$ when $L \rightarrow 0$

APL when $L_0 = 0, Q_0 = 0$

if $MP \downarrow$ as $L \uparrow$ and $MP > 0$

1. TP must be \downarrow (x) $\Rightarrow MP > 0 \Rightarrow TP \uparrow$ as $L \uparrow$.

2. APL must be \downarrow (x) \Rightarrow Draw the diagram



$$TC = TUC + TFC$$

$$\frac{TC}{Q} = \frac{TUC}{Q} + \frac{TFC}{Q}$$

$$ATC = AVC + AFC$$

