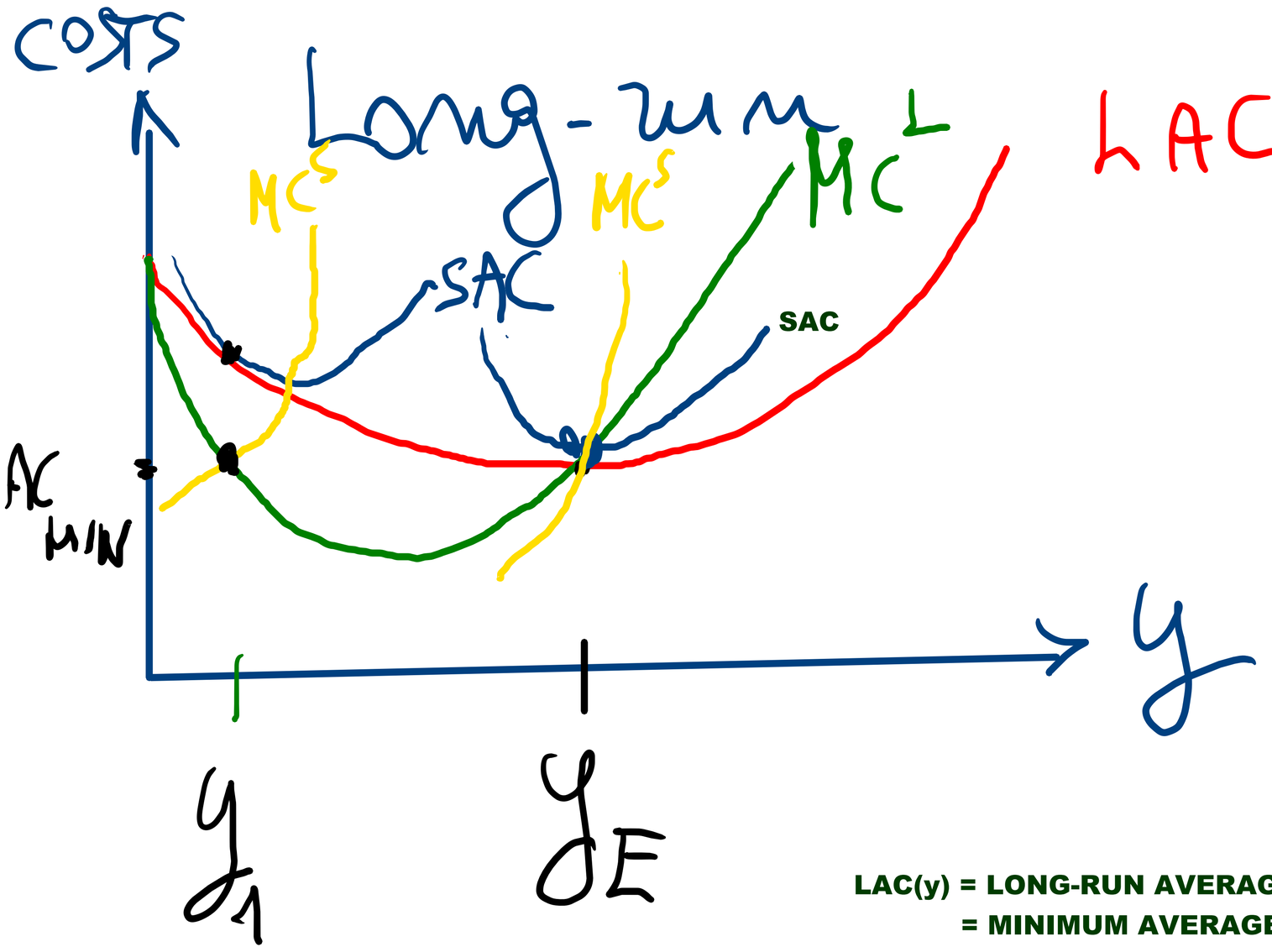
Monday december 2
Tutorial: h. 10 - 12
Room CHIOSTRO

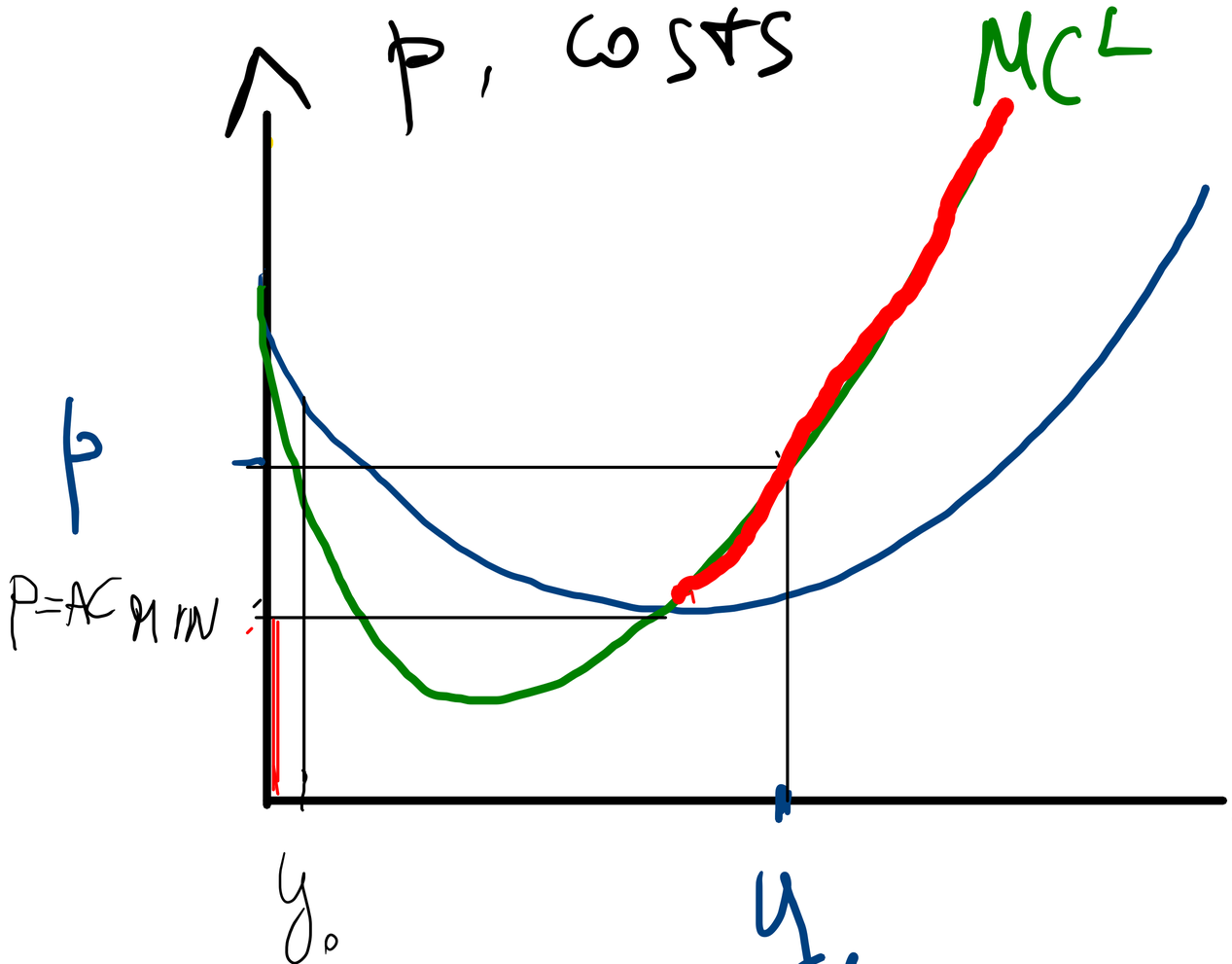
2nd part. exam
Tuesday 17 h. 12
Room 9



$y_E = y$ s.t
AC(y) is
minimum

given w_1, w_2

LAC(y) = LONG-RUN AVERAGE COST OF OUTPUT y AT INPUT PRICES w1, w2
= MINIMUM AVERAGE COST FOR PRODUCING y
= AVERAGE COST TO PRODUCE y WHEN THE QUANTITY OF EACH FACTOR IS COST-MINIMISING AT INPUT PRICES w1, w2.
(INCLUDING FACTOR 2 WICH IS FIXED IN THE SHORT RUN)



LONG RUN

$$\max_y \; p \cdot y - C(y)$$

$$\max_y \Pi : \frac{\partial \Pi}{\partial y} = 0$$

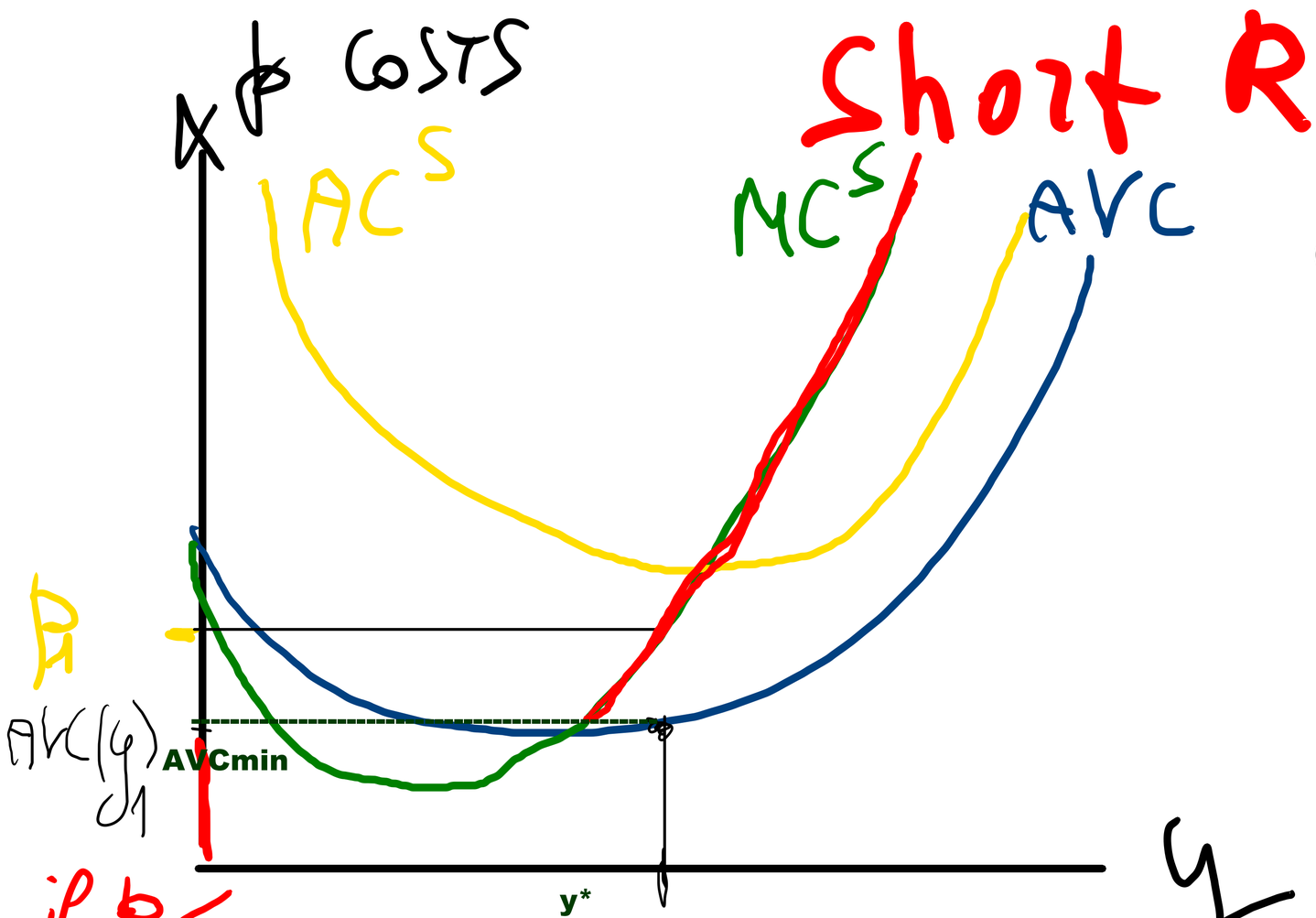
$$\begin{cases} p = MC(y) \\ p \geq AC(y) \end{cases}$$

Long Run Shut down cond:

$p < AC_{MIN}$

Short Run

y* = output such that AVC(y) = AVCmin



$$C = VC + F$$

$$AC = AVC + \frac{F}{y}$$

$$p_1 = MC^S(y_1)$$

Revenue at p_1 = $p_1 \cdot y_1$

> VARIABLE COST = y1 x AVC(y1)

if p < Min AVC then y = 0

$$\text{Var. Cost}(y_1) = y_1 \cdot AVC(y_1)$$

SHUT-DOWN PRICE IS:

M/N AVC = p^S if $p < p^S$ $y = 0$

Producer's Surplus

$p \cdot y$ – Minimum Revenue at which the firm is willing to produce y

Short Run = $p \cdot y$ – Var. Cost (y)

Long Run = $p \cdot y$ – $C(y)$ = π

Profit

Long-Run Industry Supply

$p \geq AC_{MIN}$ otherwise exit

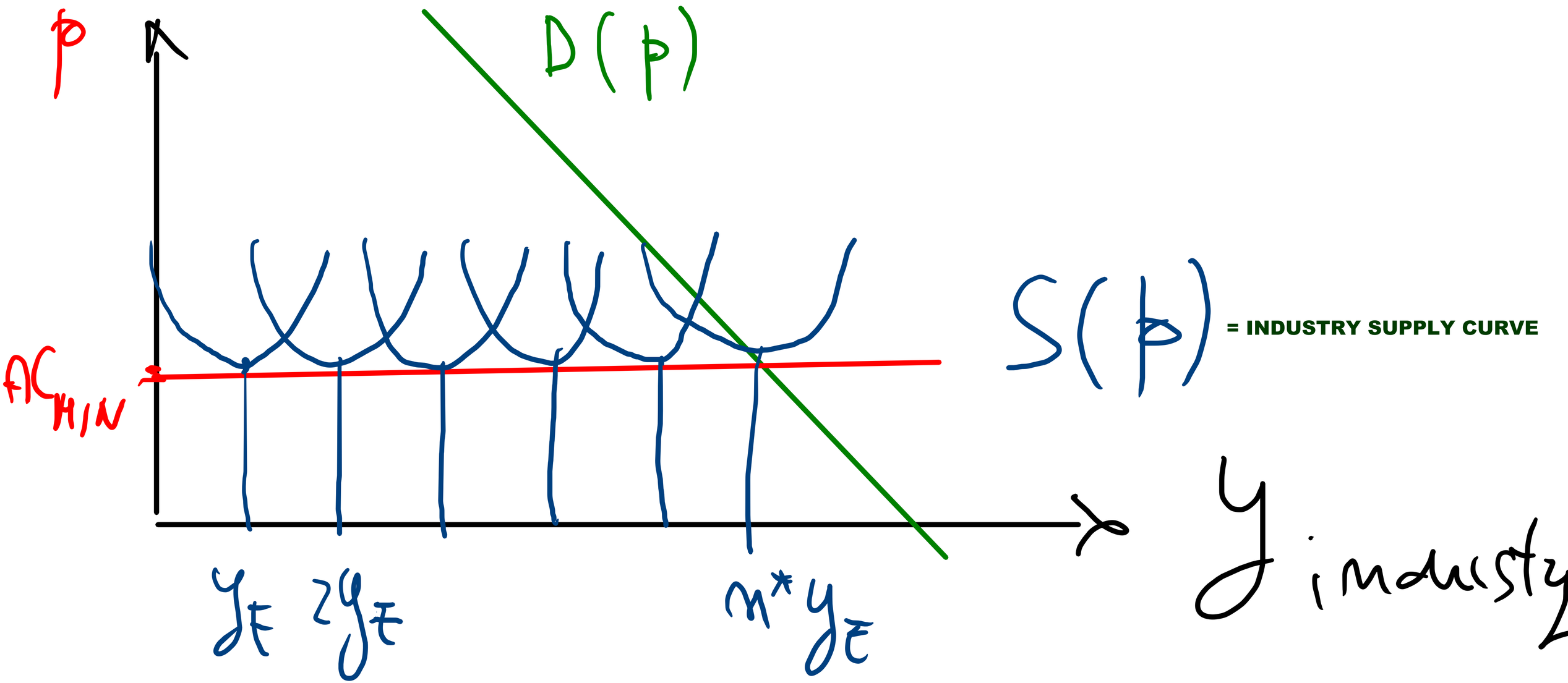
$p > AC_{MIN} \rightarrow$ entry

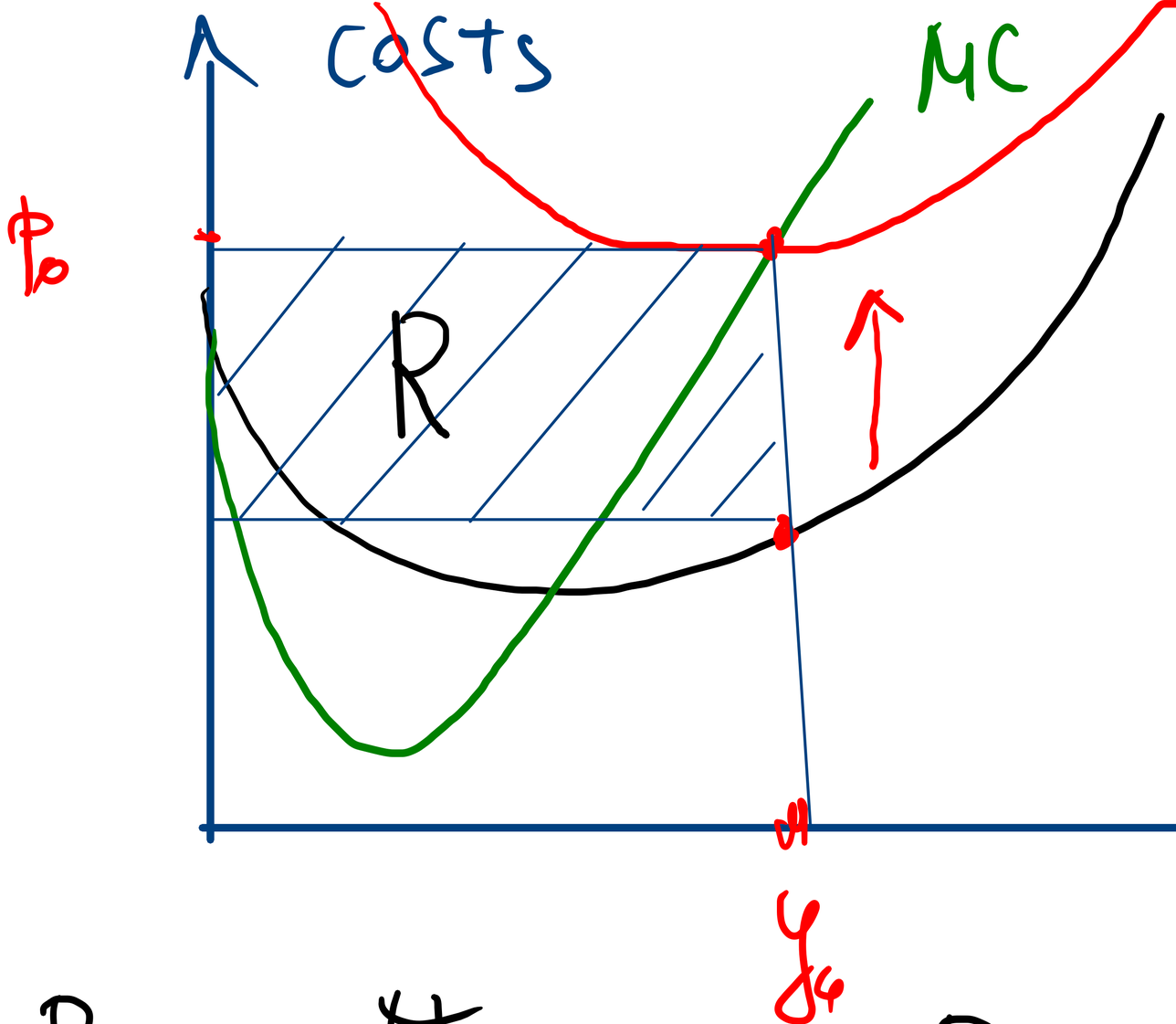
$\rightarrow p = AC_{MIN}$

n = NUMBER OF FIRMS

$y_i \approx y_E$ long run n

n^* : max n s.t. $\begin{cases} (n+1)y_E > D(p = AC_{MIN}) \\ n y_E \leq D(p = AC_{MIN}) \end{cases}$


p
D(p)
AC_{MIN}
y_F $2y_F$
$n^* y_F$
S(p)
= INDUSTRY SUPPLY CURVE
y industry



Firm i

$SAC(y) \cdot y_0 = C(y_0)$

$p_0 y_0 - C(y_0) = \Pi_0$

FIRMS IN INDUSTRY ARE USING ONE FACTOR (ex. land, oil) WHICH IS FULLY EMPLOYED AND IN LIMITED SUPPLY. IF FIRMS MAKE POSITIVE PROFITS, COMPETITION TO BUY MORE UNITS OF THE FACTOR WILL DRIVE THE FACTOR PRICE AND THE AVERAGE COST UP UNTIL PROFIT=0

$R = \Pi_0$ $\qquad$ $R =$ factor Rent

in the long run $\Pi \to 0$

RENT = factor remuneration exceeding the cost of making the factor productive (ex. cost of oil extraction, cost of land maintenance)

Constant Returns to Scale

Long Run

Costs

$D(p)$

p^*

INDUSTRY SUPPLY
y* IS DETERMINED

$MC^L = AC^L$

NUMBER OF FIRMS n

y industry

n is undetermined y^* industry

y_i " " " industry

FIRM'S OUTPUT IS UNDETERMINED