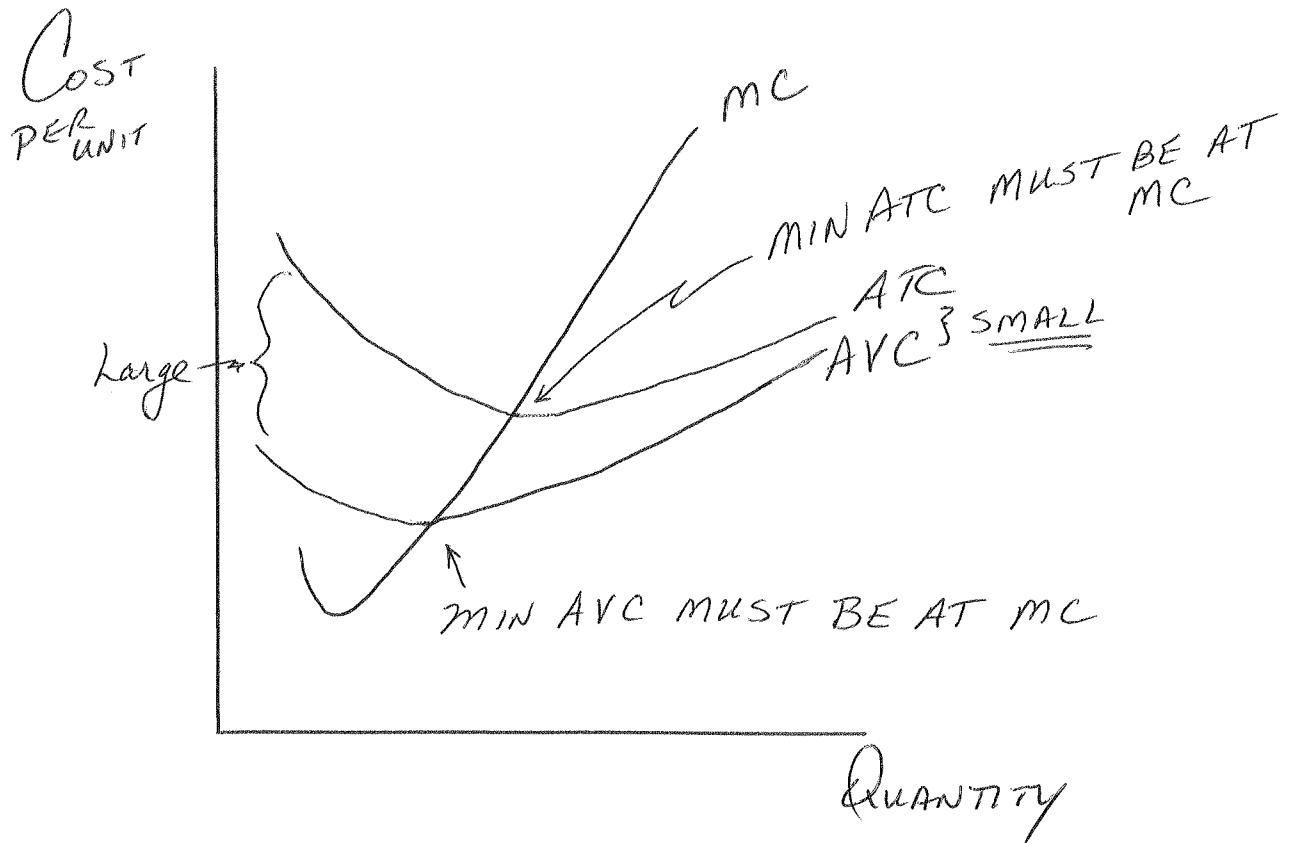


# Key! COST CURVES



$$TC = TFC + TVC$$

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

$$\text{so } ATC = AFC + AVC$$

NO NEED TO  
DRAW AFC ON  
THE ABOVE GRAPH

## MARGINAL/AVERAGE RULE

$MAR > AVE \Rightarrow AVE \text{ INCREASES}$

$MAR = AVE \Rightarrow \text{NO CHANGE IN AVE}$

$MAR < AV \Rightarrow AVE \text{ DECREASES}$

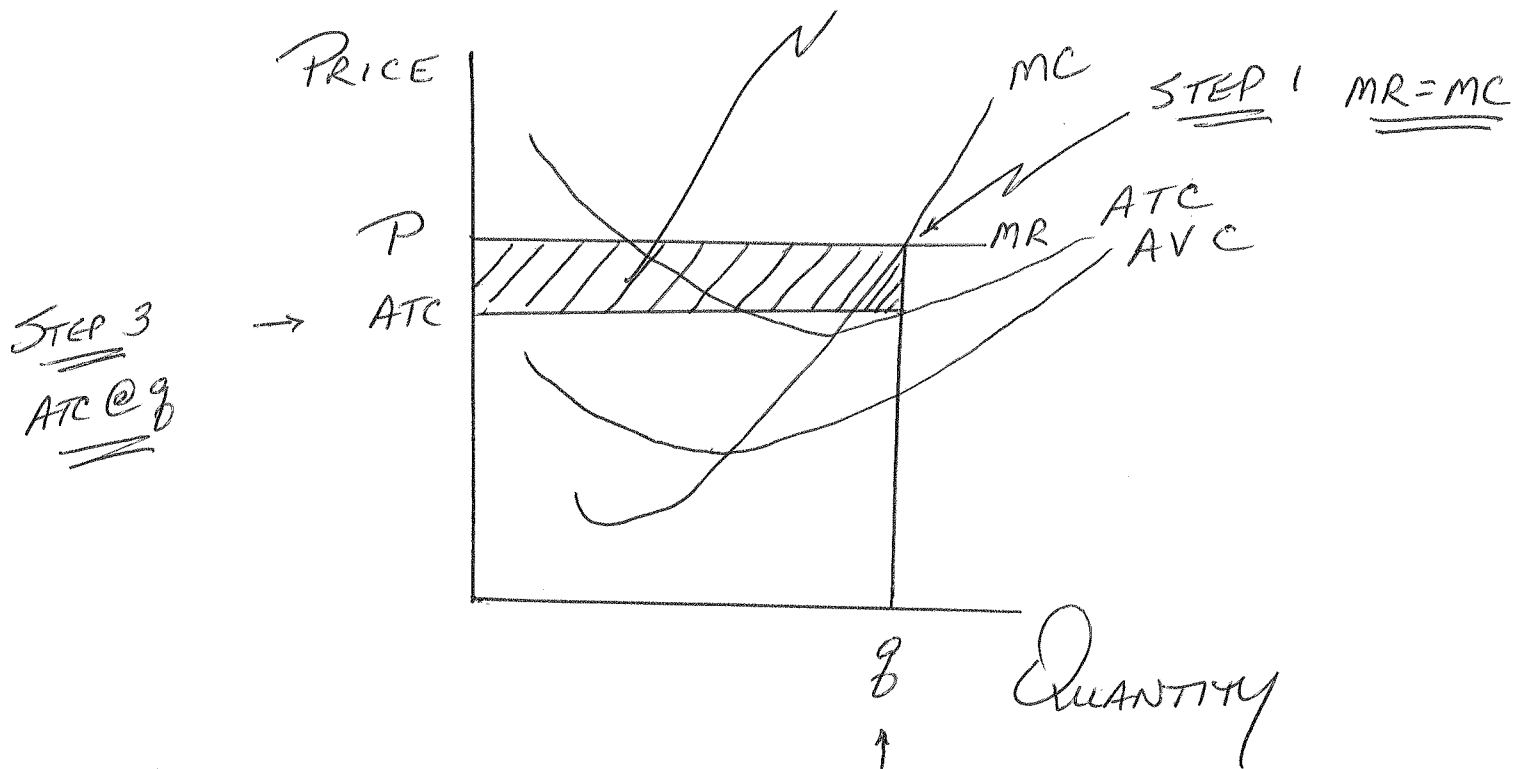
HOWEVER  $ATC \neq AVC$

MUST HAVE A LARGE

DISTANCE AT SMALL Q  
AND A SMALL DISTANCE  
AT LARGE QUANTITY

# PERFECT COMPETITION: SHORT-RUN PROFIT

## STEP 4: SHORT-RUN PROFIT



$$\begin{aligned} \text{TOTAL} &= P \times q \\ \text{REVENUE} & \end{aligned}$$

$$\begin{aligned} \text{STEP 2} \\ \text{quantity} \end{aligned}$$

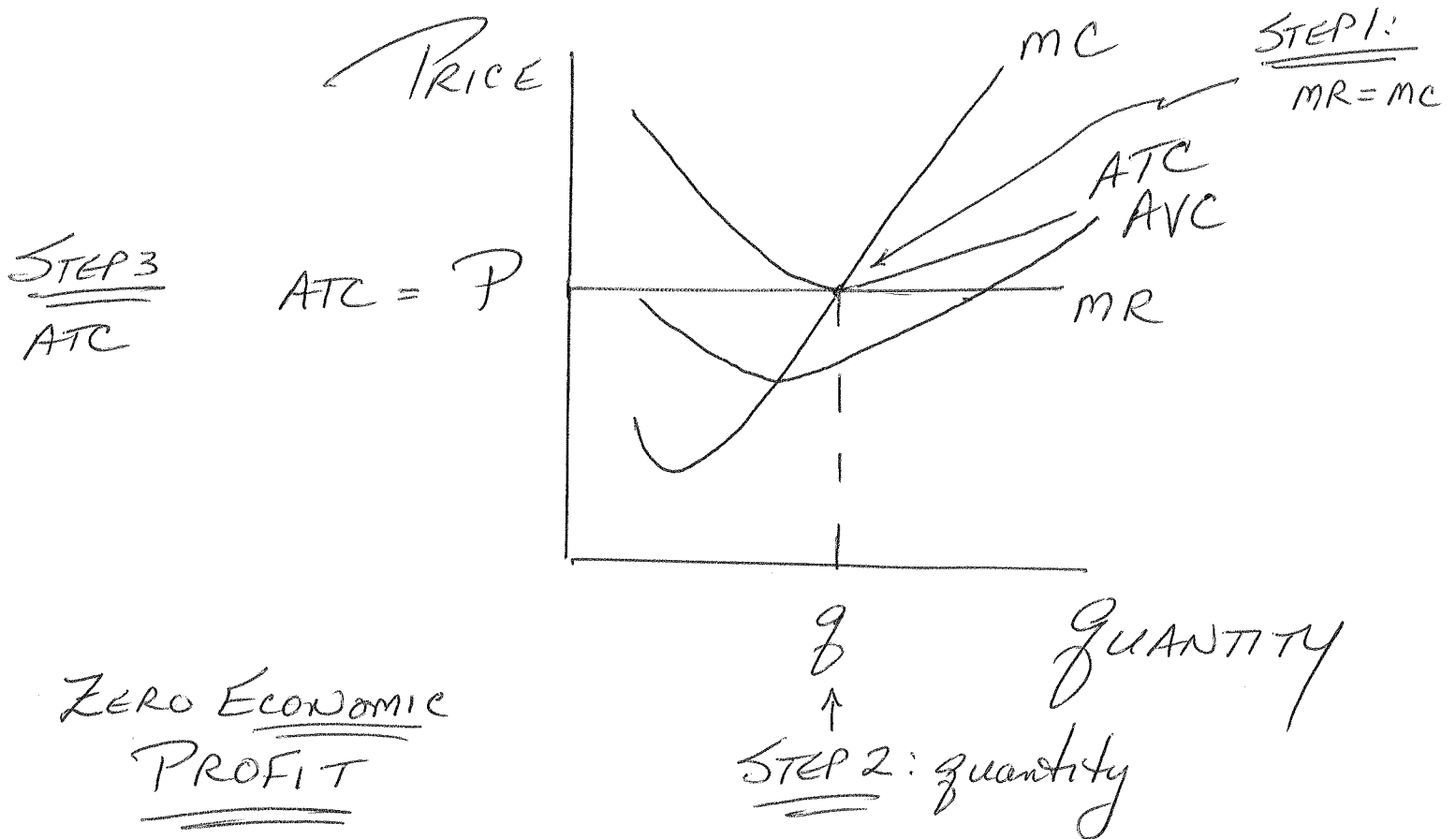
$$\begin{aligned} \text{TOTAL} &= \text{ATC} \times q \\ \text{COST} & \end{aligned}$$

$$\begin{aligned} \text{So Profit } (\pi) &= \text{TR} - \text{TC} \\ &= P \cdot q - \text{ATC} \cdot q \\ &= (P - \text{ATC}) \cdot q \quad \text{--- SHADED ABOVE} \end{aligned}$$

WITH ECONOMIC PROFIT, IN LONG-RUN FIRMS WILL ENTER (ENTREPRENEURS SEE AN OPPORTUNITY) FOR EXAMPLE

# BREAKEVEN: PERFECT COMPETITION

(ALSO THE LONG-RUN) - ALL INPUTS VARIABLE  
SO AVC DOES NOT EXIST ONLY ATC



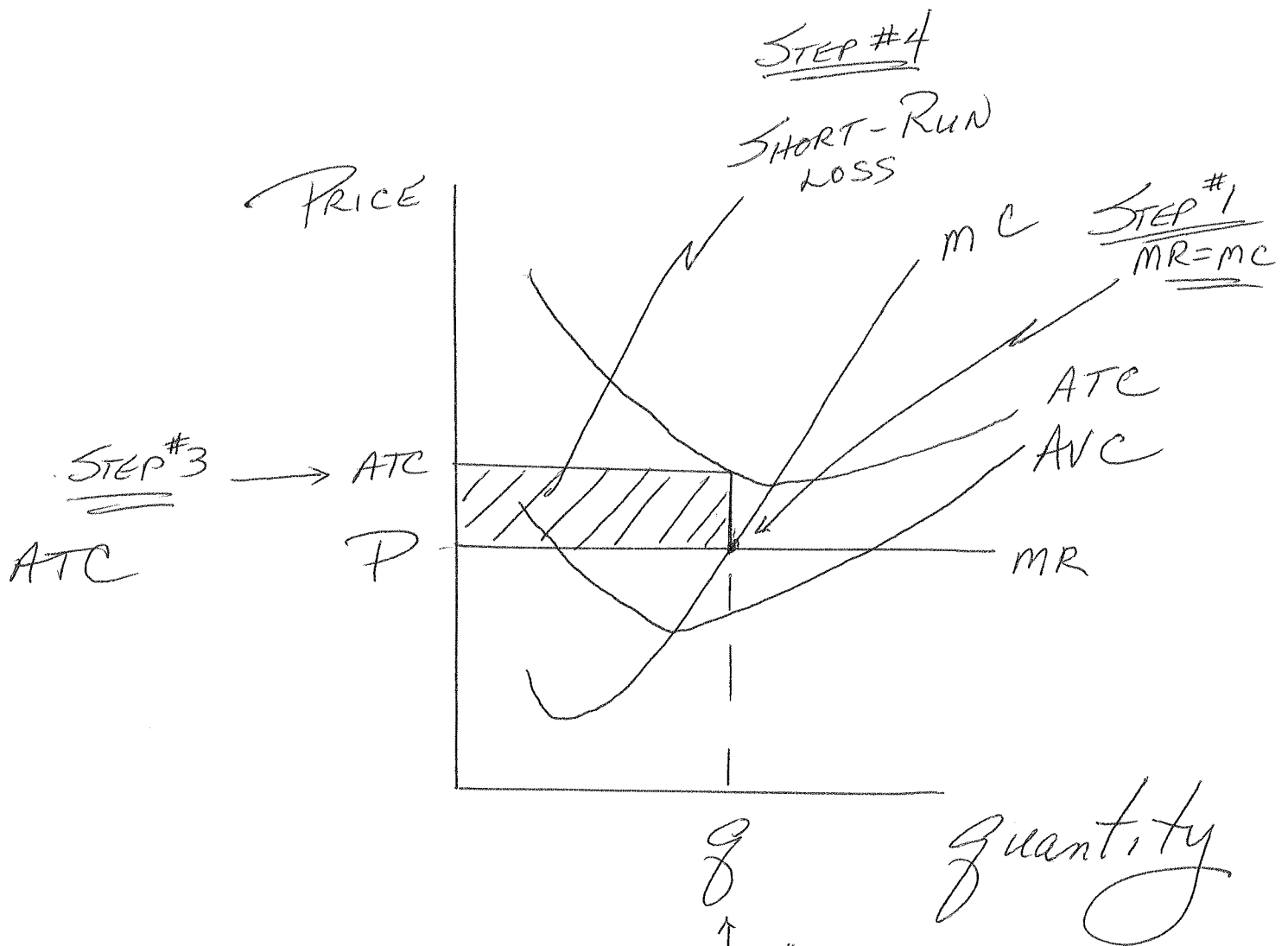
$$\text{PROFIT} = \text{TR} - \text{TC}$$

$$= (P - \text{ATC}) \cdot q$$

$$P = \text{ATC} \text{ SO PROFIT (ECONOMIC)} = 0$$

ECONOMIC PROFIT, REMEMBER, MEANS THE SHAREHOLDERS (OWNERS) RECEIVE A RETURN LARGE ENOUGH SO THEY CONTINUE THEIR INVESTMENT

# PERFECT COMPETITION: SHORT-RUN LOSS



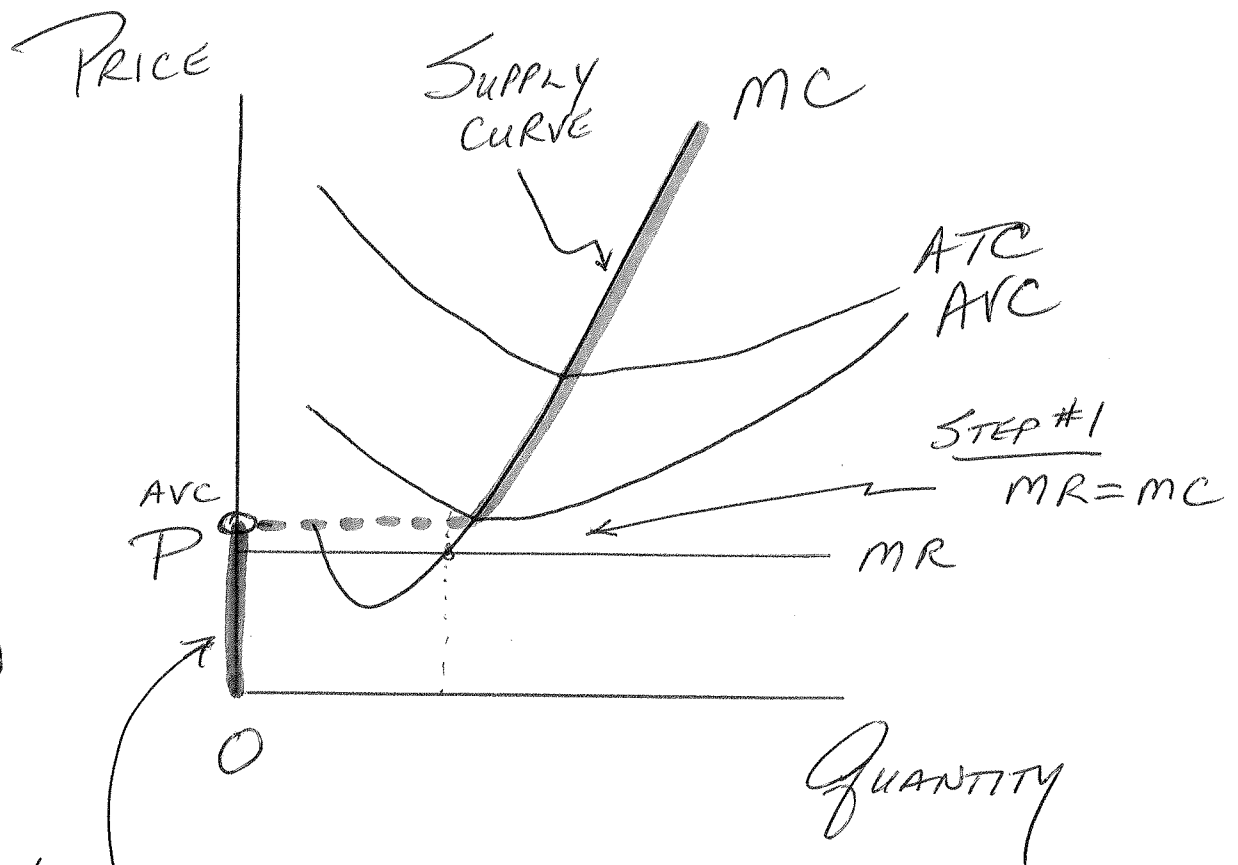
$$P \geq AVC$$

THE BUSINESS  
MUST BE ABLE

TO PAY WORKERS & SUPPLIERS  $\Rightarrow$  IF  $P < AVC$ ,  
THE FIRM MUST SHUT DOWN IN THE SHORT-RUN

# PERFECT COMPETITION: SUPPLY CURVE

## SHUT DOWN



$$P < AVC$$

SHUT DOWN

CHEAPER  
TO ONLY  
PAY FIXED

COSTS IN  
SHORT-RUN

SO PRODUCE

ZERO

NO VARIABLE  
COSTS

SUPPLY CURVE

ZERO BELOW MINIMUM AV

AT MIN AVC AND ABOVE, THE

SUPPLY CURVE IS THE MC

CURVE. YOU MUST IDENTIFY

BOTH ON THE EXAM