Competitive Markets I

Introduction and Profit Maximization

BECO-3310 Fall 2025

Firms & the Market

- Almost everything that we consume is produced by a firm.
- For every firm producing a good, there are other firms that are (or could be) producing substitutes.
- Firms **compete against one another** to supply goods.
- In doing so, economists assume that firms aim to **maximize profits**.

Firms & the Market

- Profit-maximizing firms will behave differently depending on the extent of competition…
- …some markets may have many competing firms…
- …some markets may have only one firm producing a good…
- …and there’s a multitude of scenarios in between.

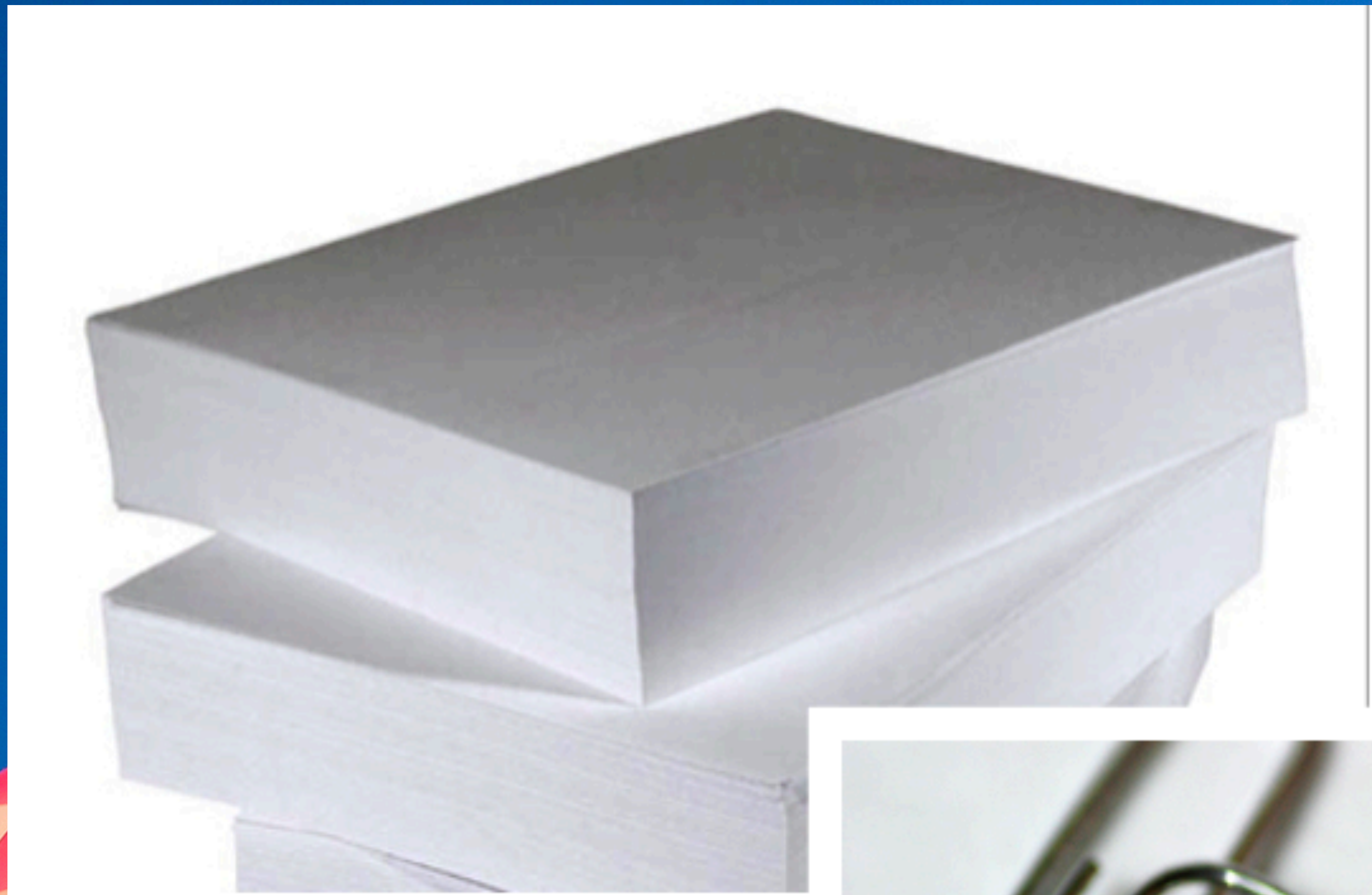
Firms & the Market

- At what price & quantity does the firm produce?
- When will the firm choose to enter, or exit, the market?
- What are the implications for profit & societal welfare?

Characteristics of Competitive Markets & Firms

What is a Competitive Market?

- The (perfectly) competitive market is the starting point—or benchmark—for economic analysis.
- The Perfect Competitive Market (PCM) is an extreme case that does not (in pure form) exist in the real world.
- It’s a model meant to teach us elementary logic of human action.




CHIN MUSIC
£9 NOTE
neo-miyako
John Edwards
SHURIKEN
best badges .co.uk
EASTPAK
BUILT TO RESIST
THIS IS ADAM'S PICK
LOS SALVADORES
D.MONIC

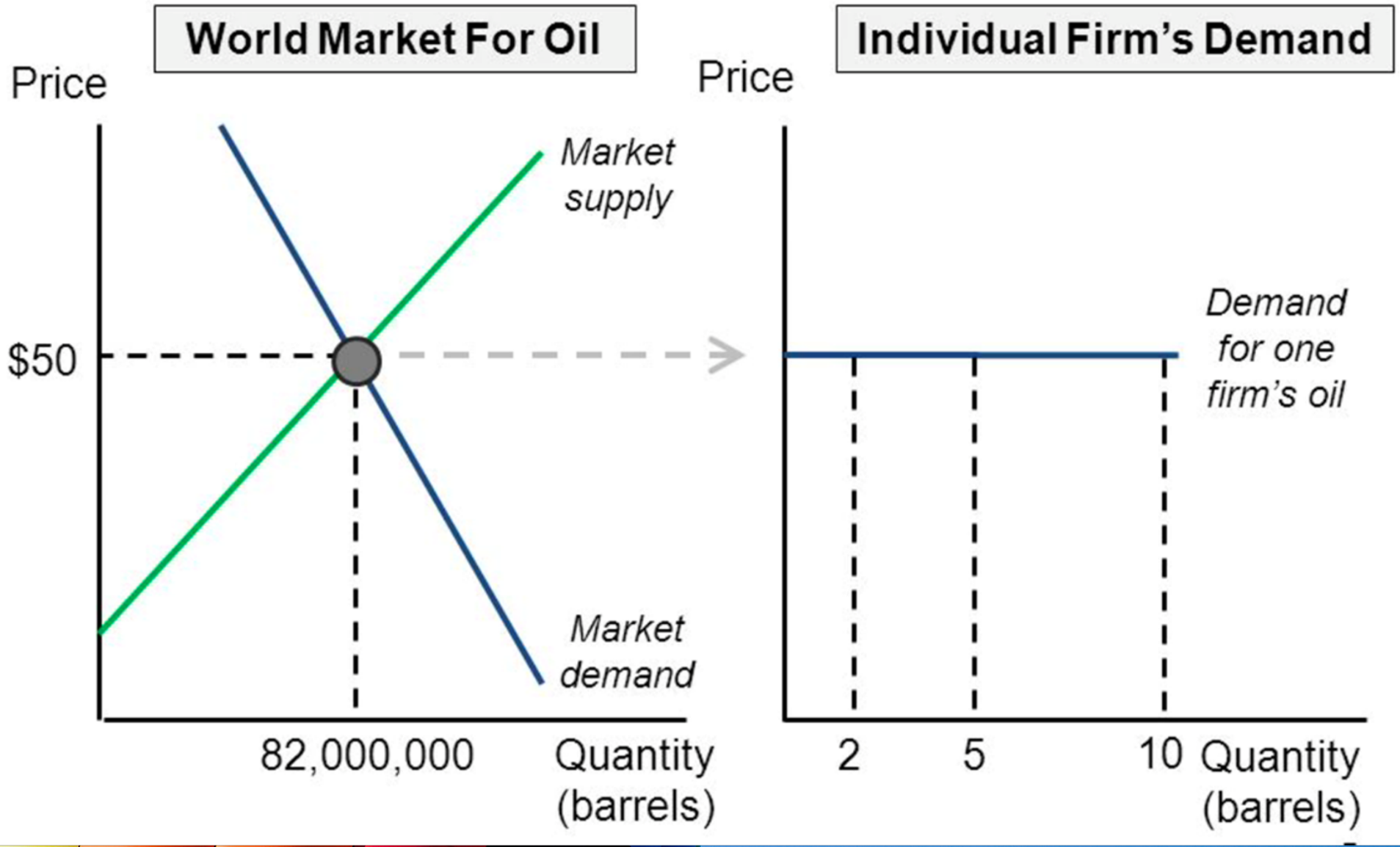
VS.

What is a Competitive Market?

- Assumptions:
  - 1. A market with many buyers & sellers.
  - 2.Trading homogenous (or very similar/identical) products.
  - 3.Firms are price takers (they do not set the price).
  - 4.Firms can freely enter or exit the market (no barriers).

Competitive Firms

- Because of the characteristics of the PCM…
  - The actions of a single firm have a **negligible impact on price**.
  - Each firm's good is undifferentiated from every other firm's good, so each firm possesses **no market power**.
  - Each firm takes the **market price as given.**
- Since all firms sell the same good, each firm must accept the price dictated by the market.


World Market For Oil
Price
Market supply
$50
Market demand
82,000,000
Quantity (barrels)
Individual Firm's Demand
Price
Demand for one firm's oil
2
5
10
Quantity (barrels)

Competitive Firms

- Competitive firms are trying to **maximize profits.**
- How do they try to do this?
  - Competitive firms are price takers, so they take price as given. Why?
  - Other firms can outprice them when there is a lot of competition.
  - So, what is left for firms to do?
- **Quantity!**
  - Firms choose how much quantity to supply to the market at a given price, in order to maximize profit.

Profit-maximization

What Quantity to Produce?

- Assuming the firm wants to maximize profit, how does it determine the Q to do so?
- First, we need to understand some important concepts…

Profit

- Profit = Total Revenue – Total Costs
- Total Revenue
  - Proportional to the amount of output.
  - TR = P x Q
- Total Costs
  - Include both fixed & variable costs.
  - TC = FC + VC

Revenue

- Total Revenue
  - Proportional to the amount of output.
  - **TR = P x Q**
- Average Revenue
  - The revenue from a typical unit of output.
  - **AR = TR / Q**
- Marginal Revenue
  - The change in TR from an additional unit sold.
  - **MR = ΔTR / ΔQ**

Revenue- or Profit-Maximizing?

- For every Q a firm produces, it will get a P.
  - But the competitive firm is a price taker.
  - So, ***P will not change*** no matter how much the firm produces. This is why they decide Q.
- Theoretically, a competitive firm can maximize revenue infinitely.
  - Why don't they do this?
  - LRATC rise at higher levels of output (diseconomies of scale)!
  - Firms need to balance the need to produce with the reality of rising costs.

Costs

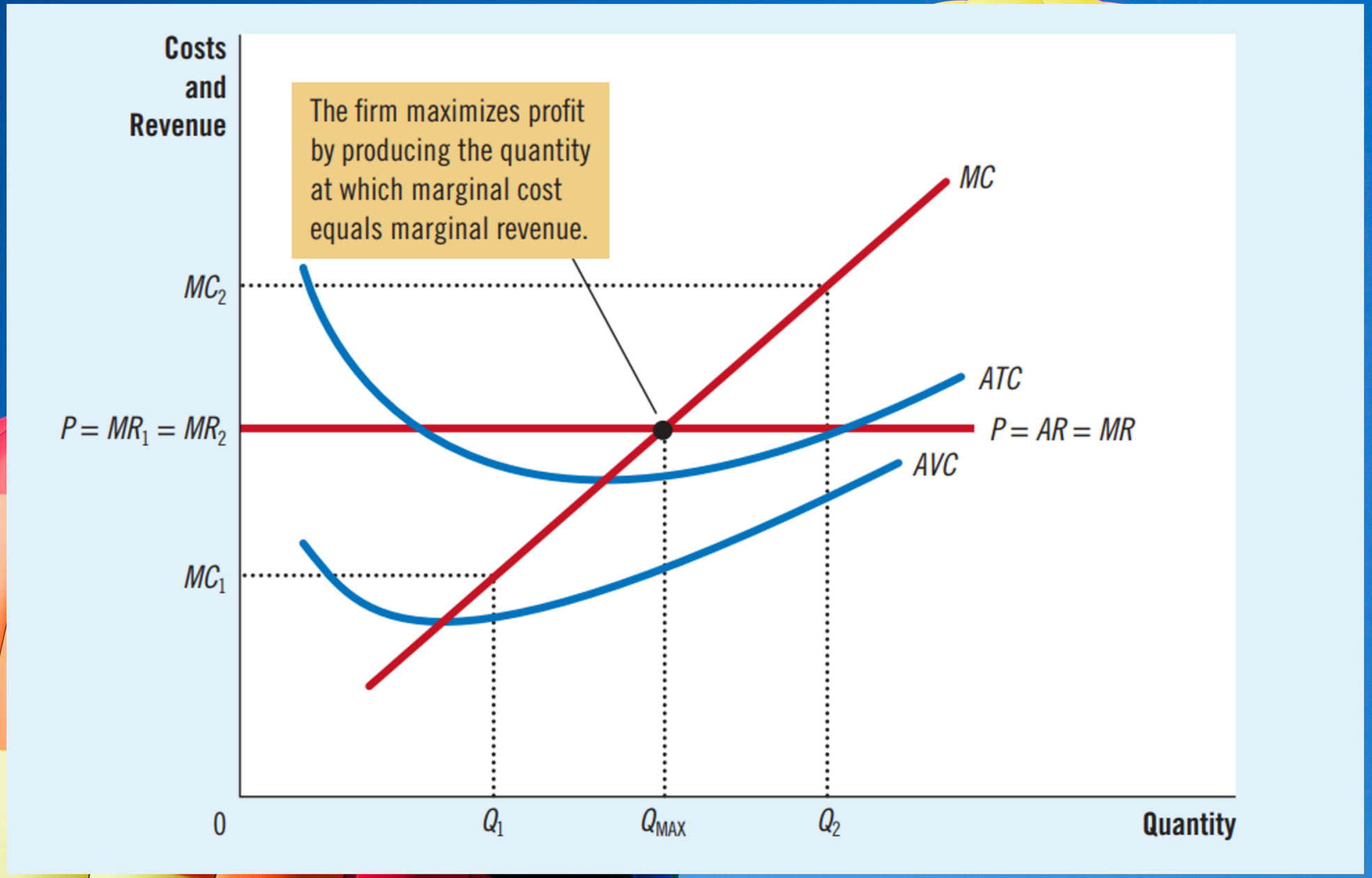
- Total Costs
  - **TC = FC + VC**
- Average Cost
  - The cost from producing a typical unit of output.
  - **AC = TC / Q**
- Marginal Cost
  - The change in TC from an additional unit sold.
  - **MC = ΔTC / ΔQ**

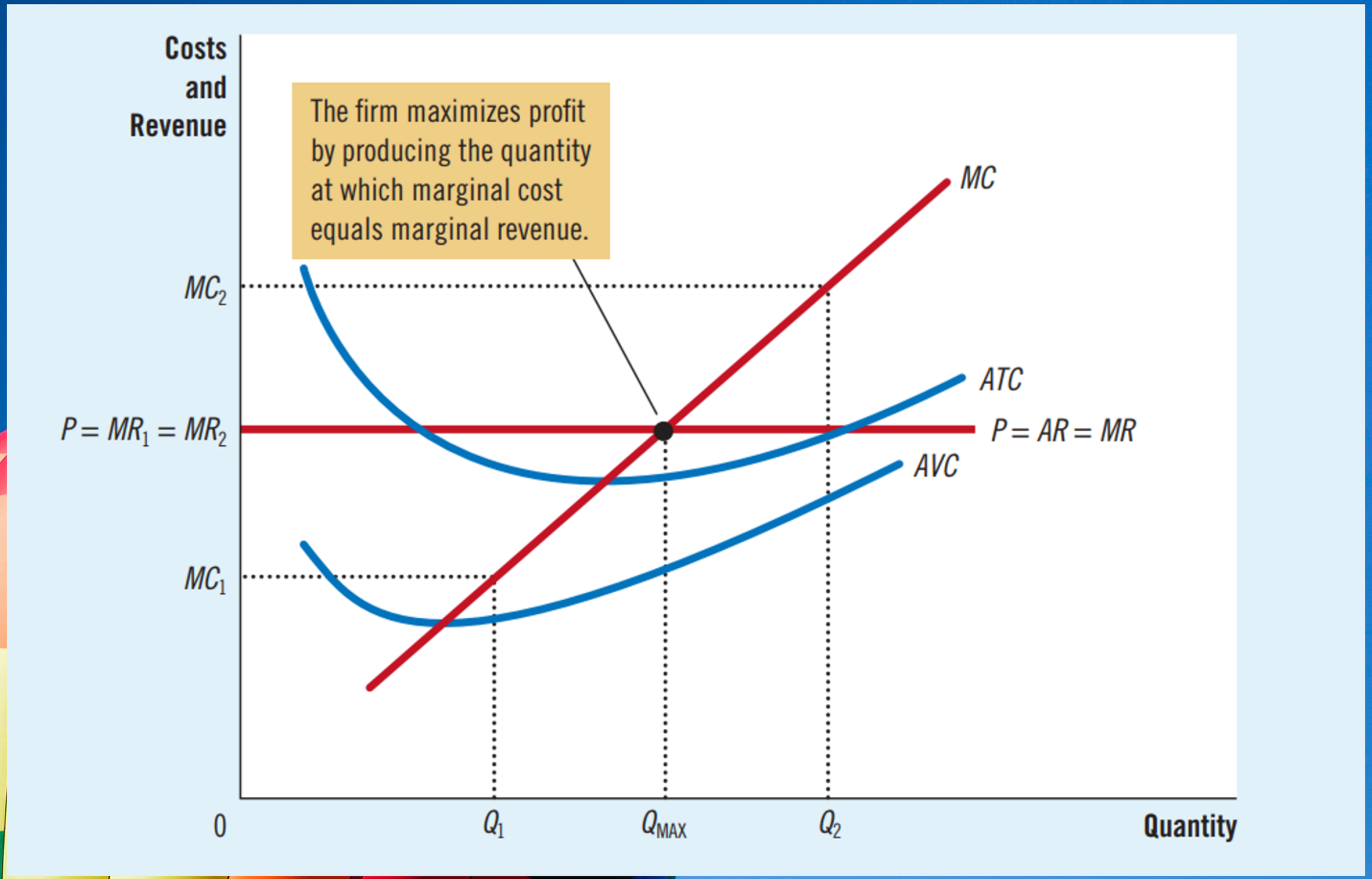
What Quantity to Produce?

- Assuming the firm wants to maximize profit, how does it determine the Q to do so?
- We need to ***think on the margin!***

- Remember the principle that rational people think on the margin.
  - If **MR > MC**, then the firm should produce another unit of output.
  - If **MR < MC**, then the firm should produce less output.
  - When **MR = MC**, profits have been maximized.

Graphical Analysis


Costs and Revenue
The firm maximizes profit by producing the quantity at which marginal cost equals marginal revenue.
MC
ATC
AVC
MC_2
$P = MR_1 = MR_2$
$P = AR = MR$
MC_1
0
Q_1
Q_{MAX}
Q_2
Quantity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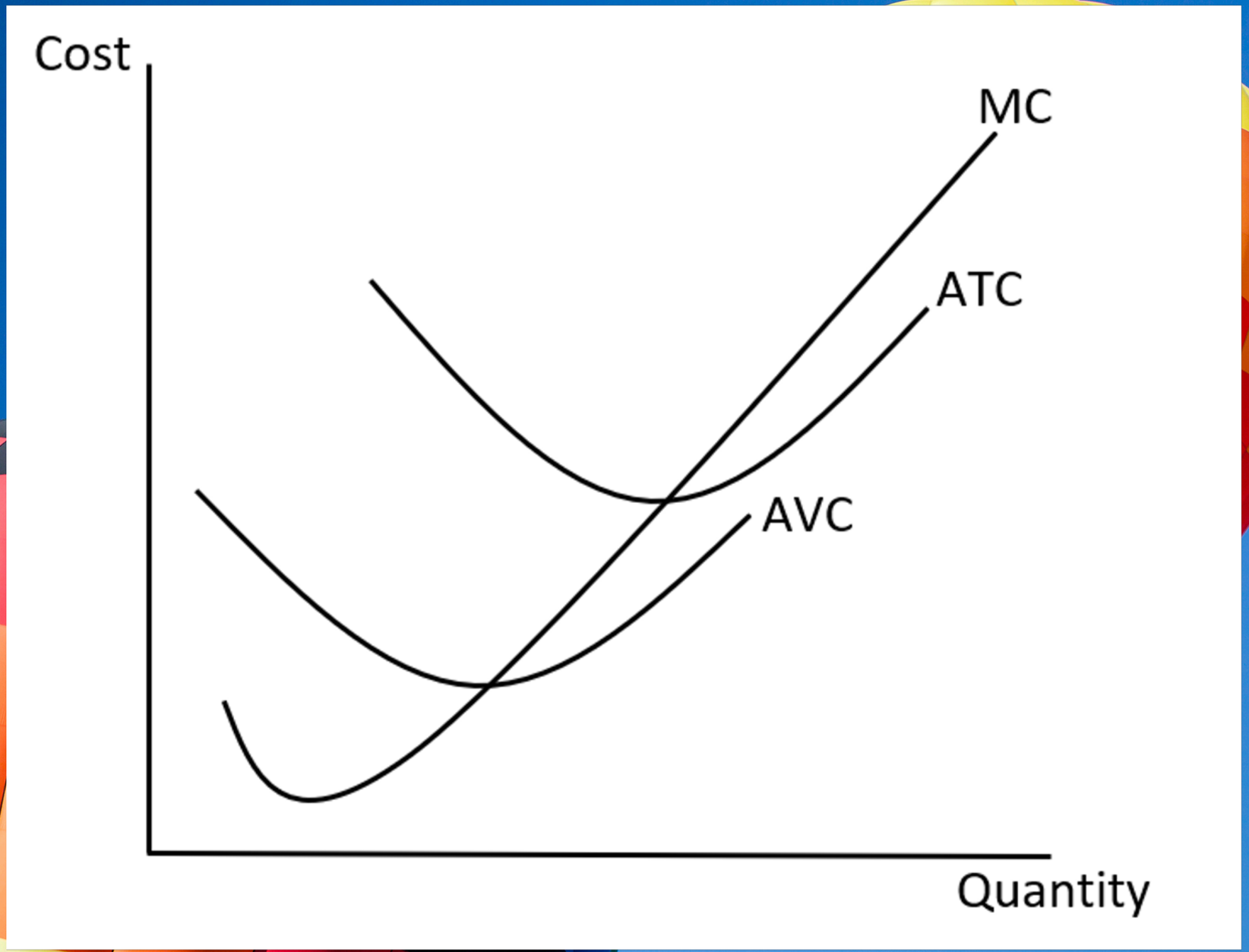
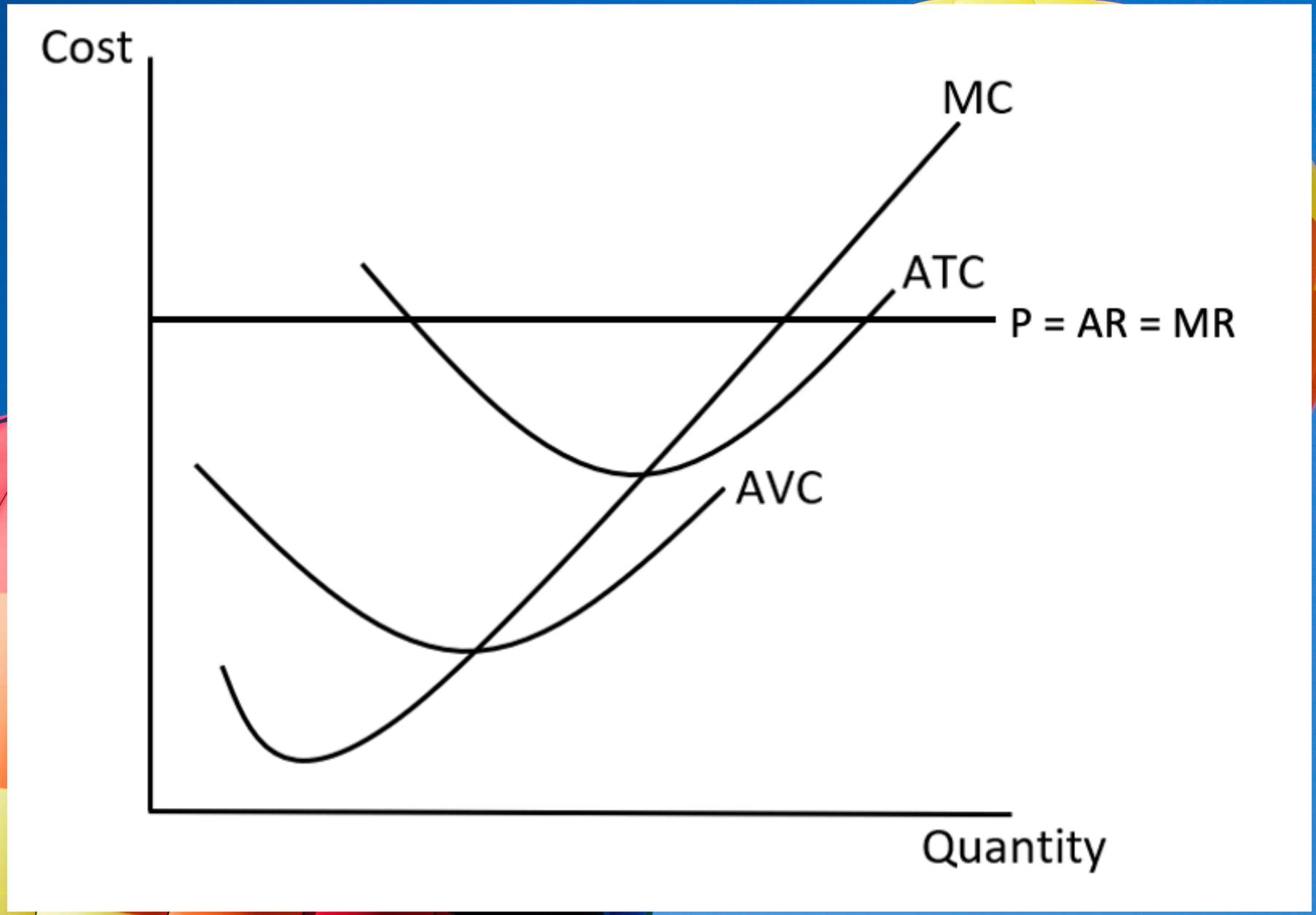
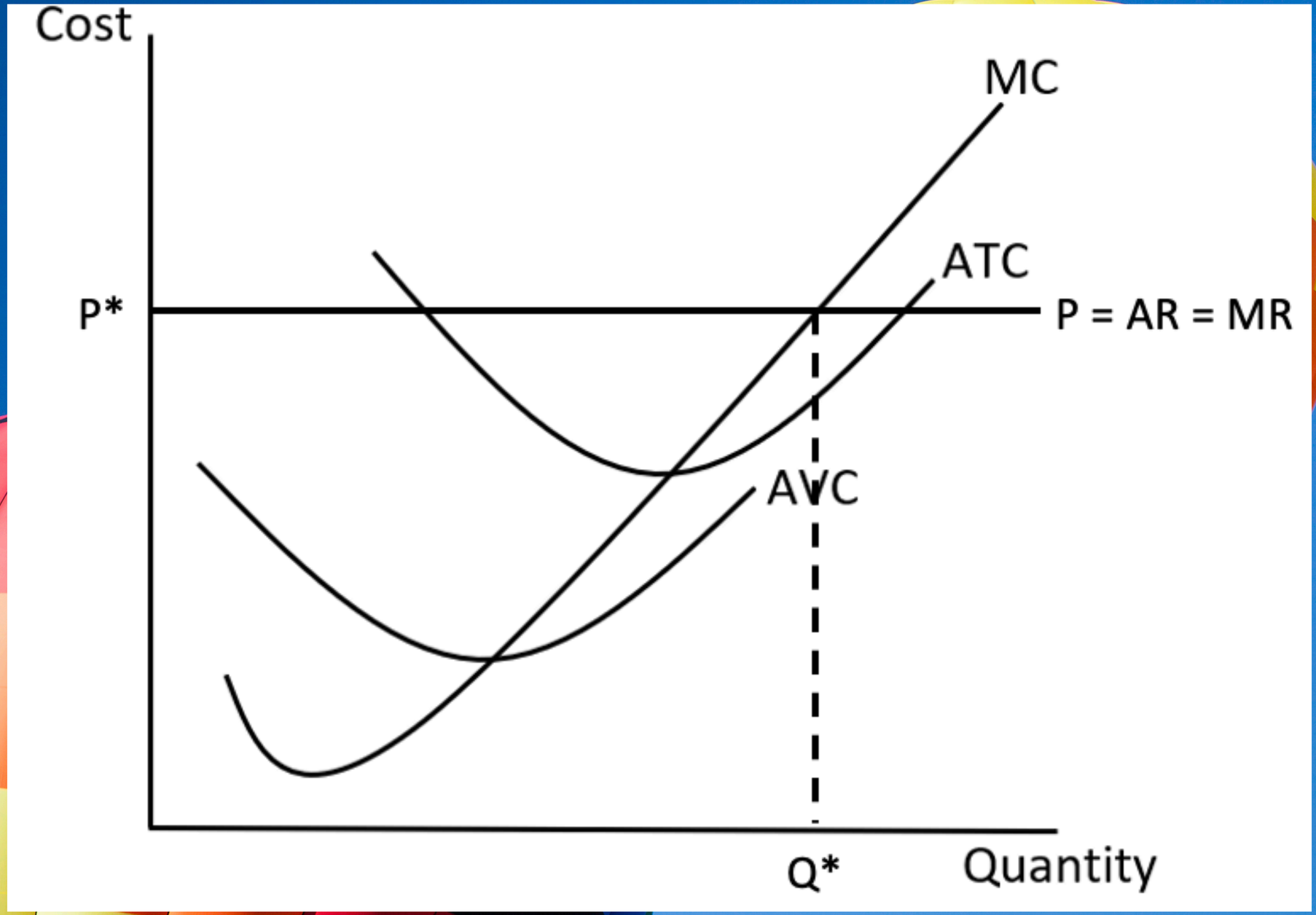
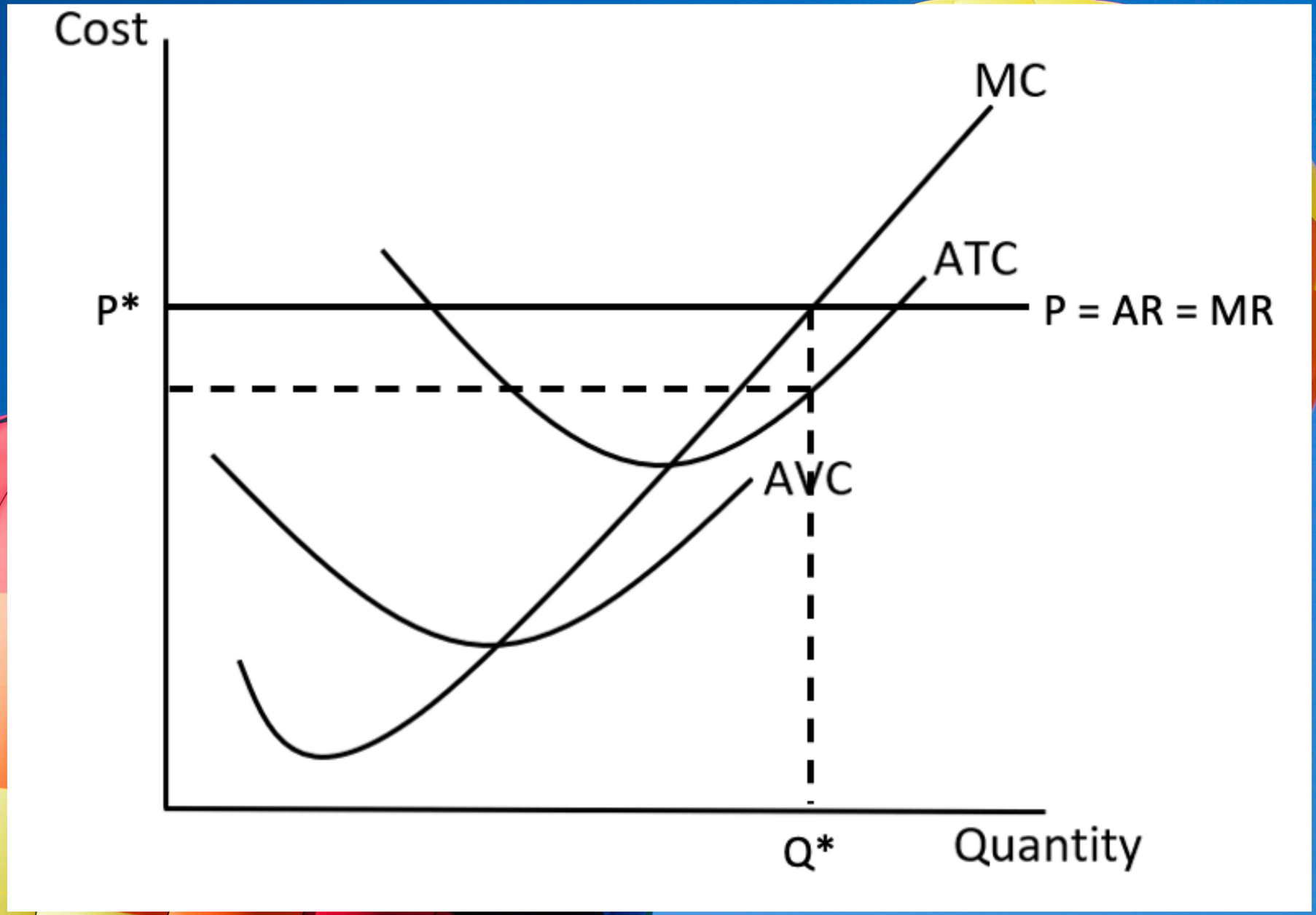
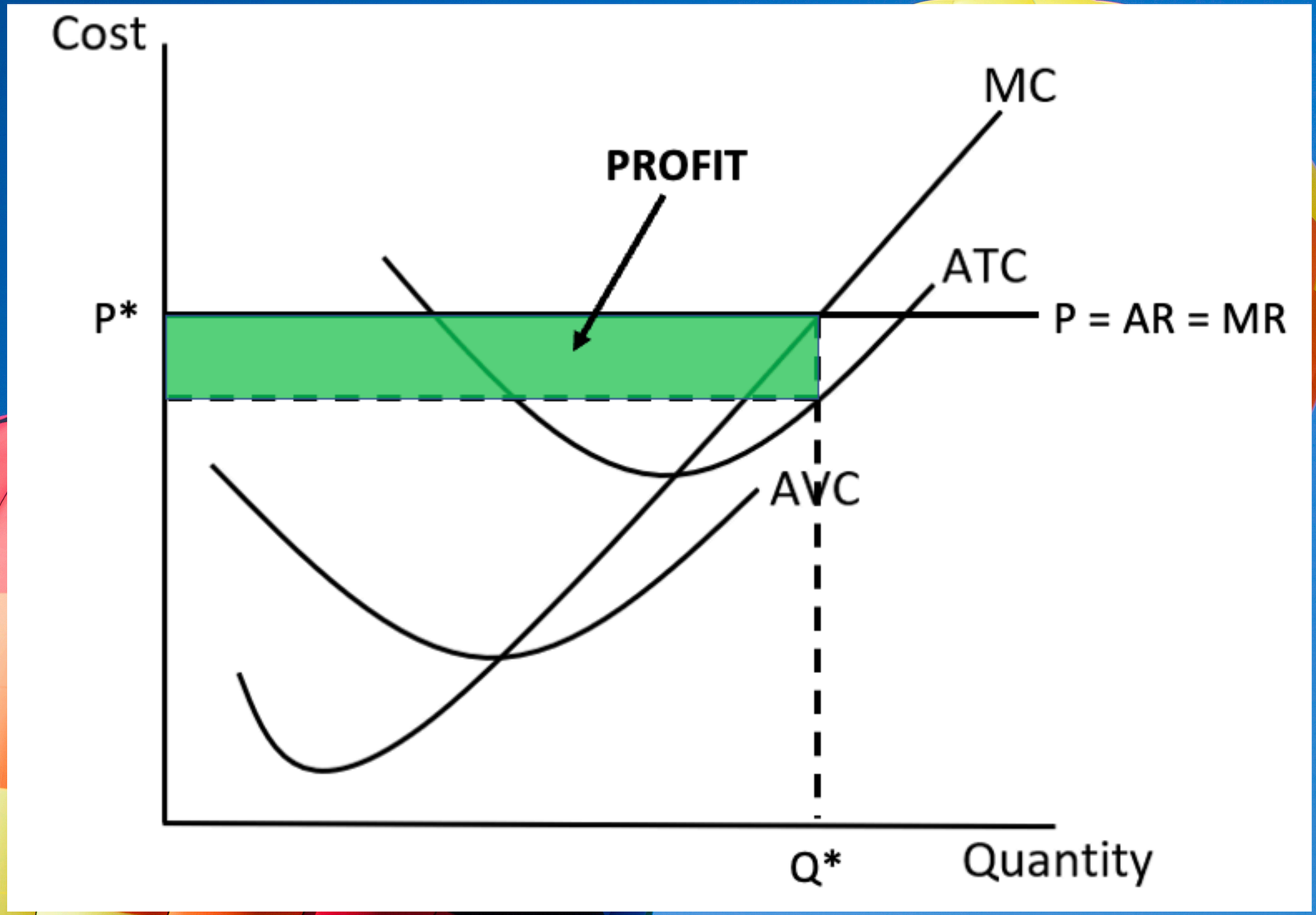

Cost
MC
ATC
AVC
Quantity


Cost
MC
ATC
P = AR = MR
AVC
Quantity


Cost
MC
ATC
P*
P = AR = MR
AVC
Q*
Quantity


Cost
MC
ATC
P*
P = AR = MR
AVC
Q*
Quantity


Cost
MC
PROFIT
ATC
P*
P = AR = MR
AVC
Q*
Quantity

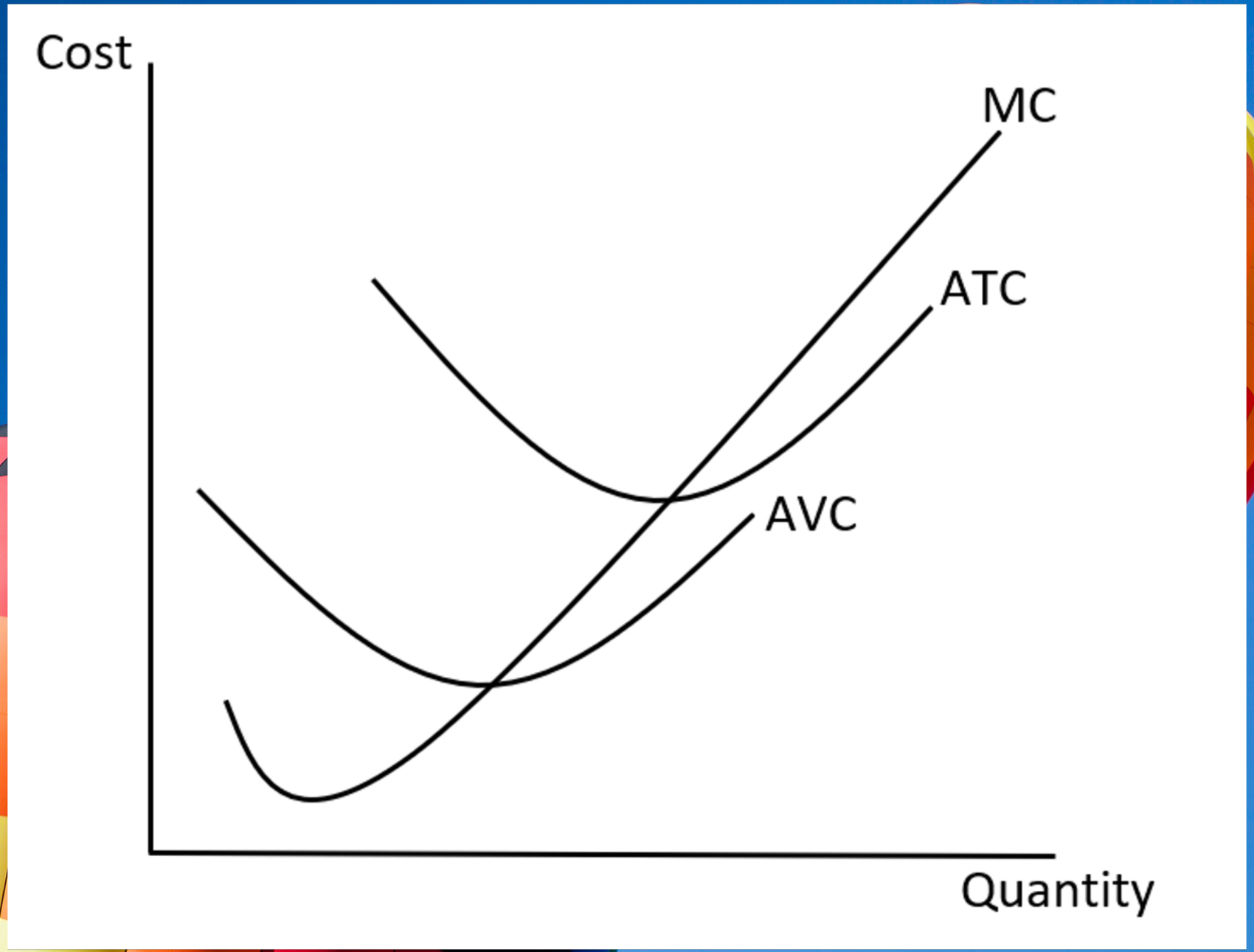
Shutdown Rule

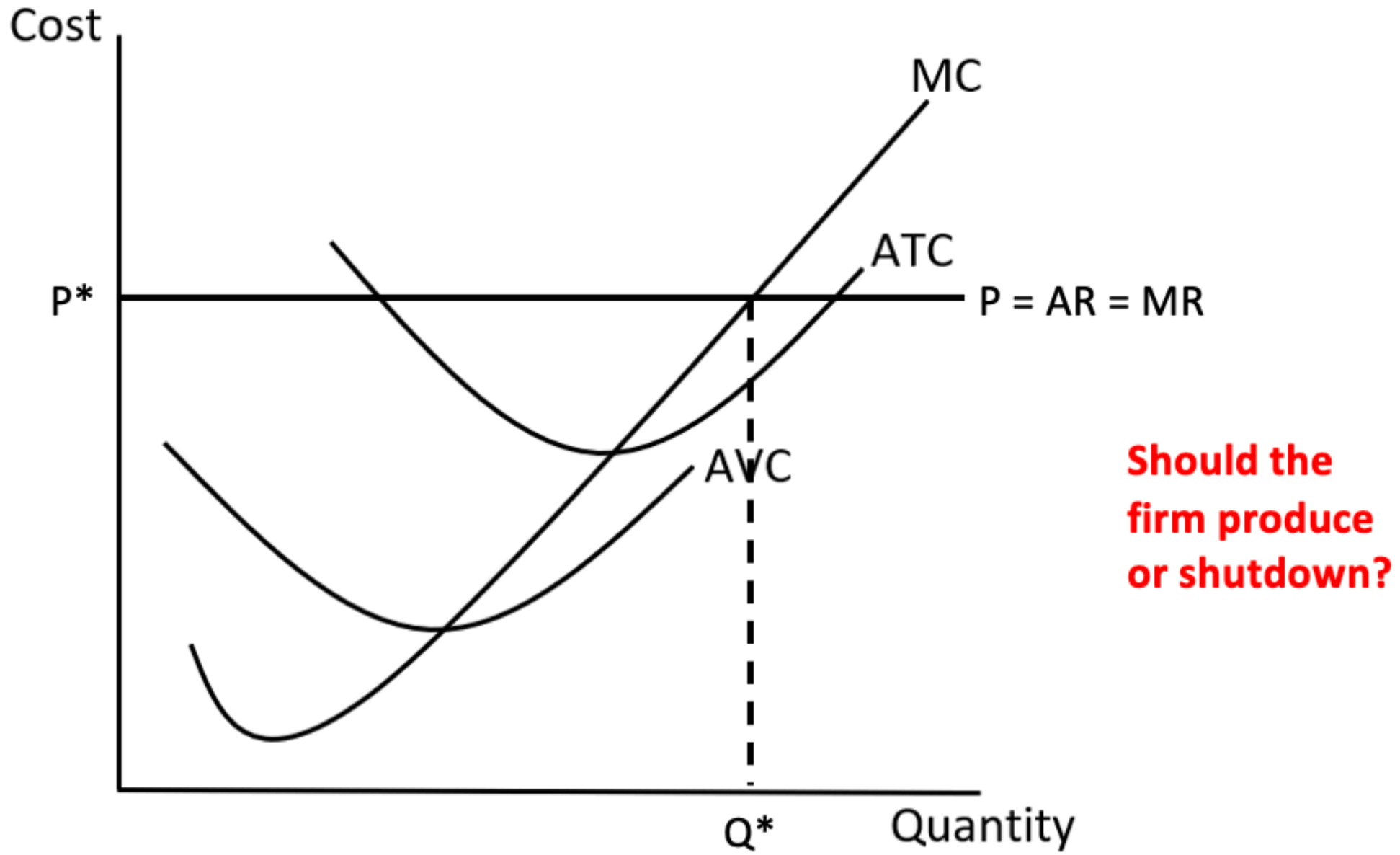
Shutdown vs. Exit

- •Shutdown
  - ***Short-run*** decision not to produce anything during a specific period of time.
  - Results because of current market conditions.
  - ***The firm still has FC to pay*** but is temporarily closing its doors to production.
- Exit
  - Long-run decision to leave the market entirely.
  - The firm doesn’t have any costs to pay.

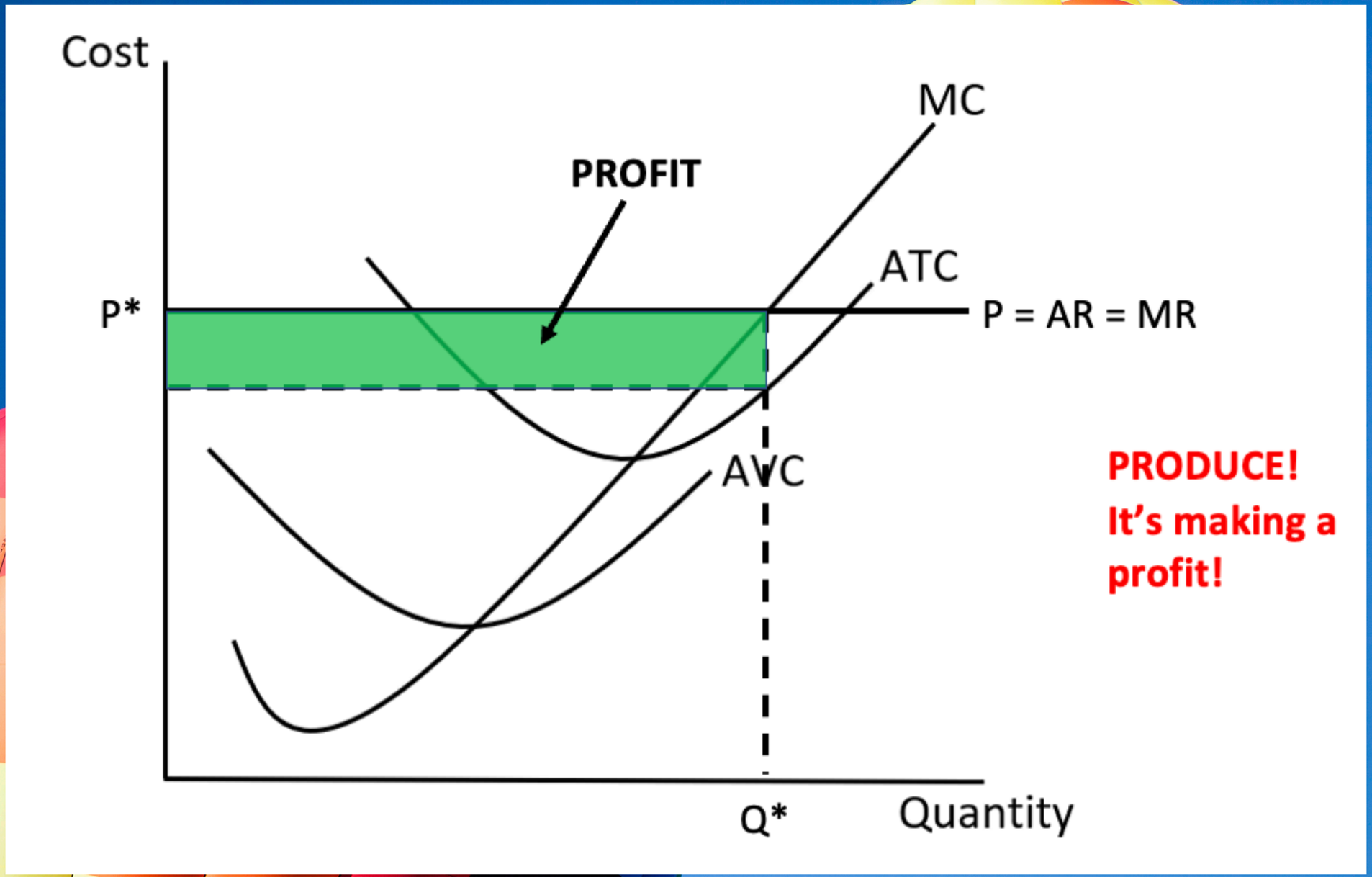
Shutdown Rule

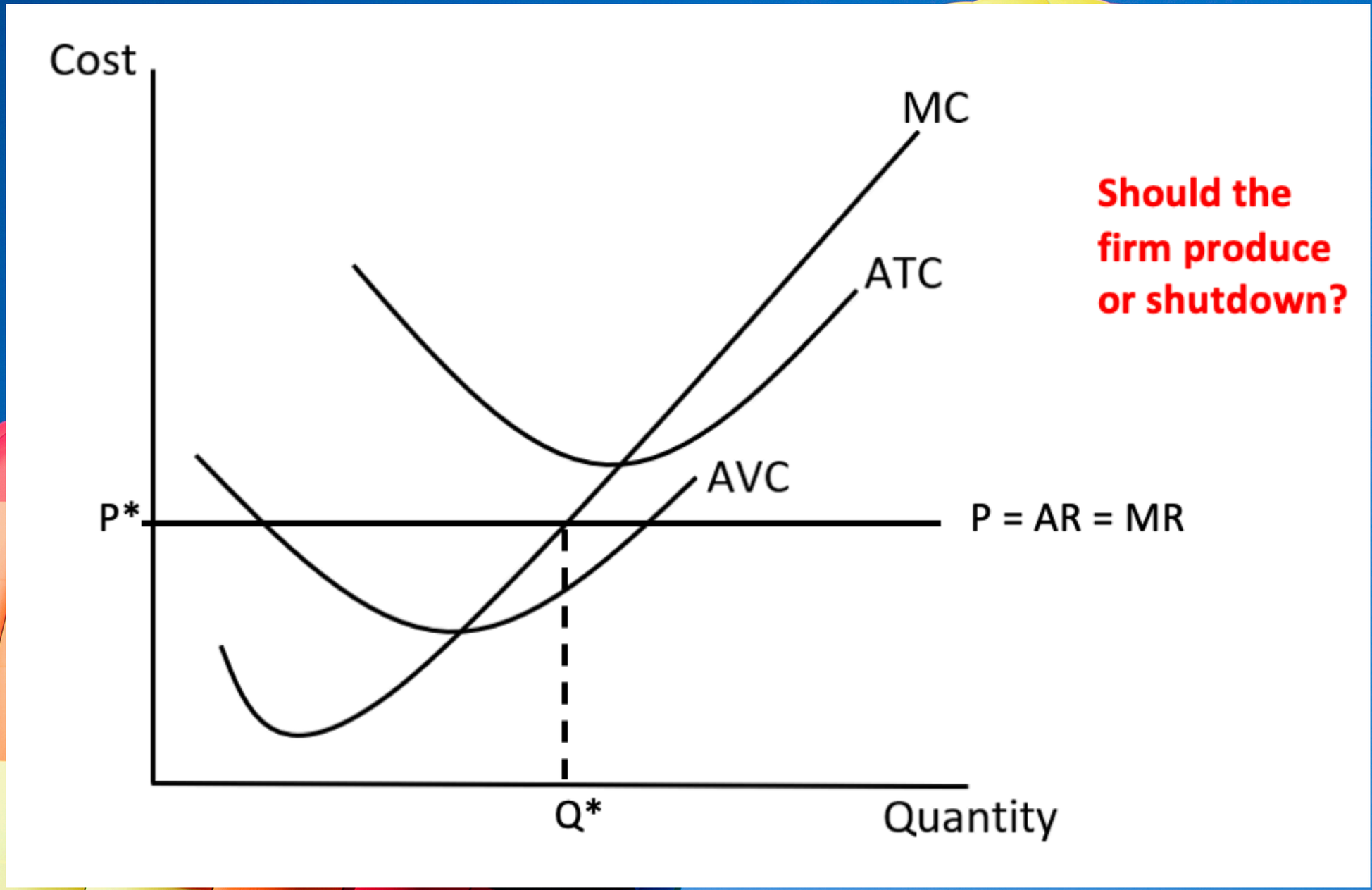
- Shutdown Rule
  - **P < AVC**
  - The firm can still cover some of its fixed costs in the short-run if it produces at a loss (instead of profit).
  - But the firm should shutdown if it can’t cover any of its variable costs.

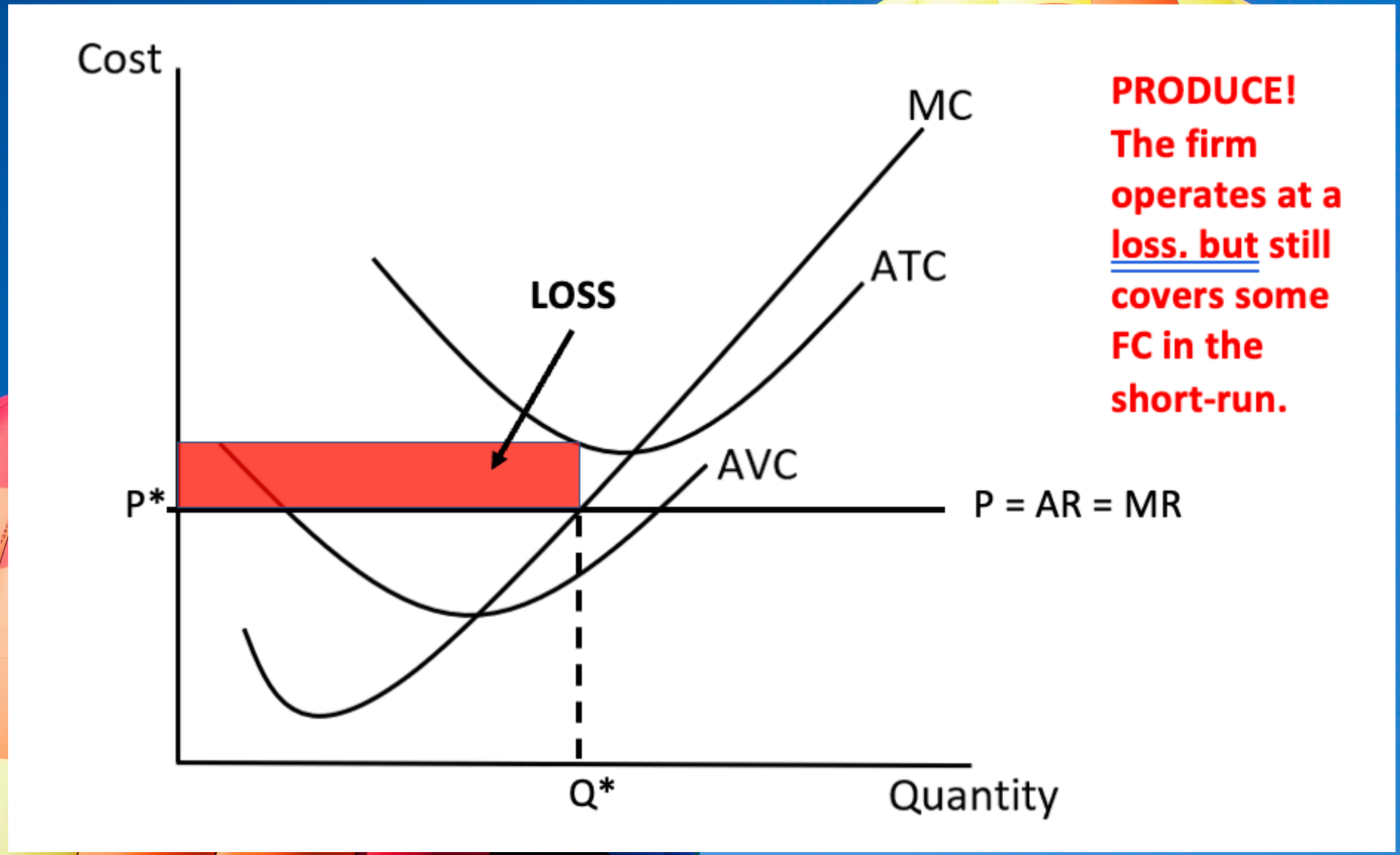

Cost
MC
ATC
AVC
Quantity



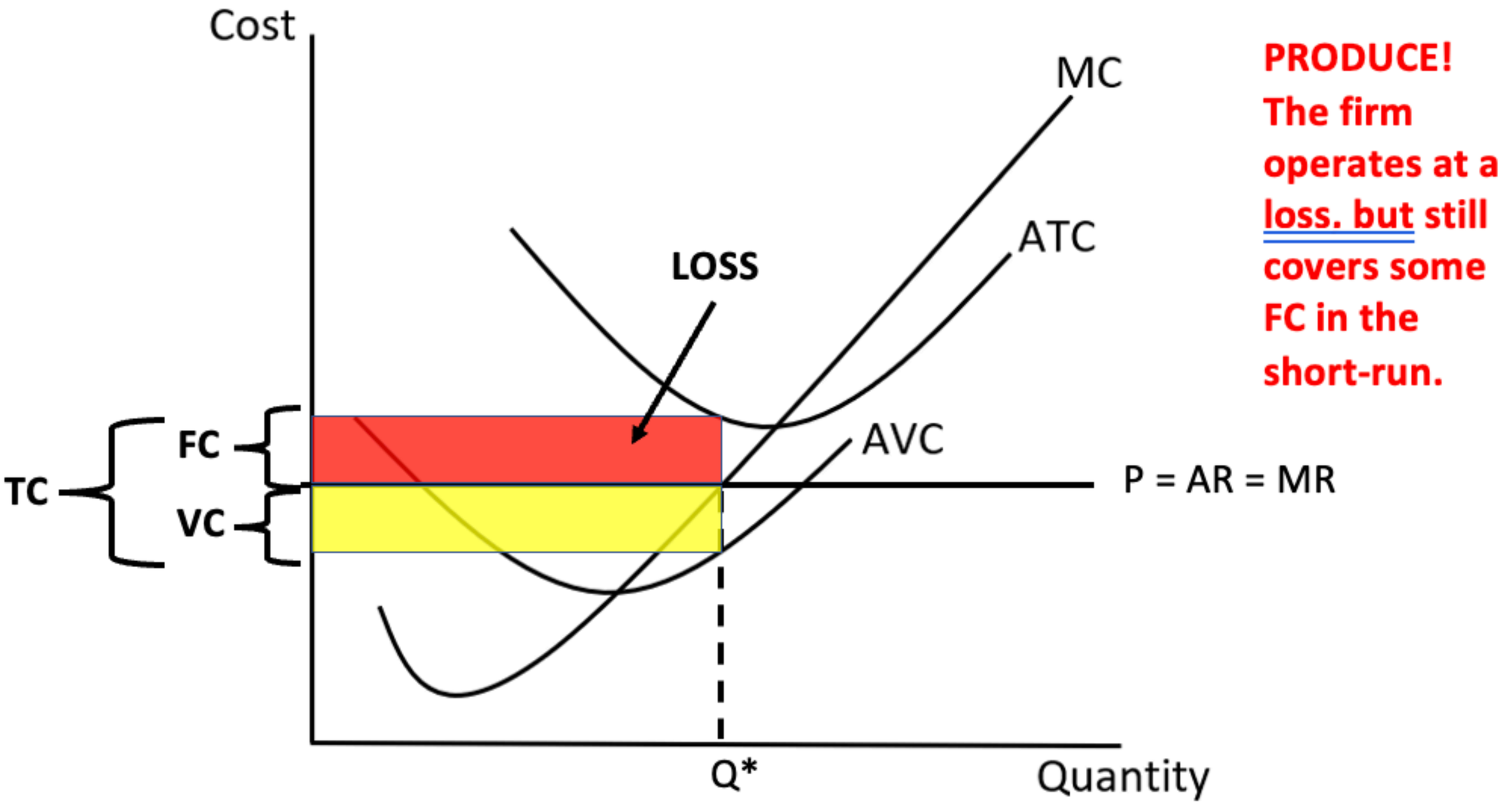
Should the firm produce or shutdown?


Cost
MC
PROFIT
ATC
P*
P = AR = MR
AVC
PRODUCE!
It's making a profit!
Q*
Quantity


Cost
MC
ATC
AVC
P*
P = AR = MR
Q*
Quantity
Should the firm produce or shutdown?



PRODUCE! The firm operates at a loss. but still covers some FC in the short-run.



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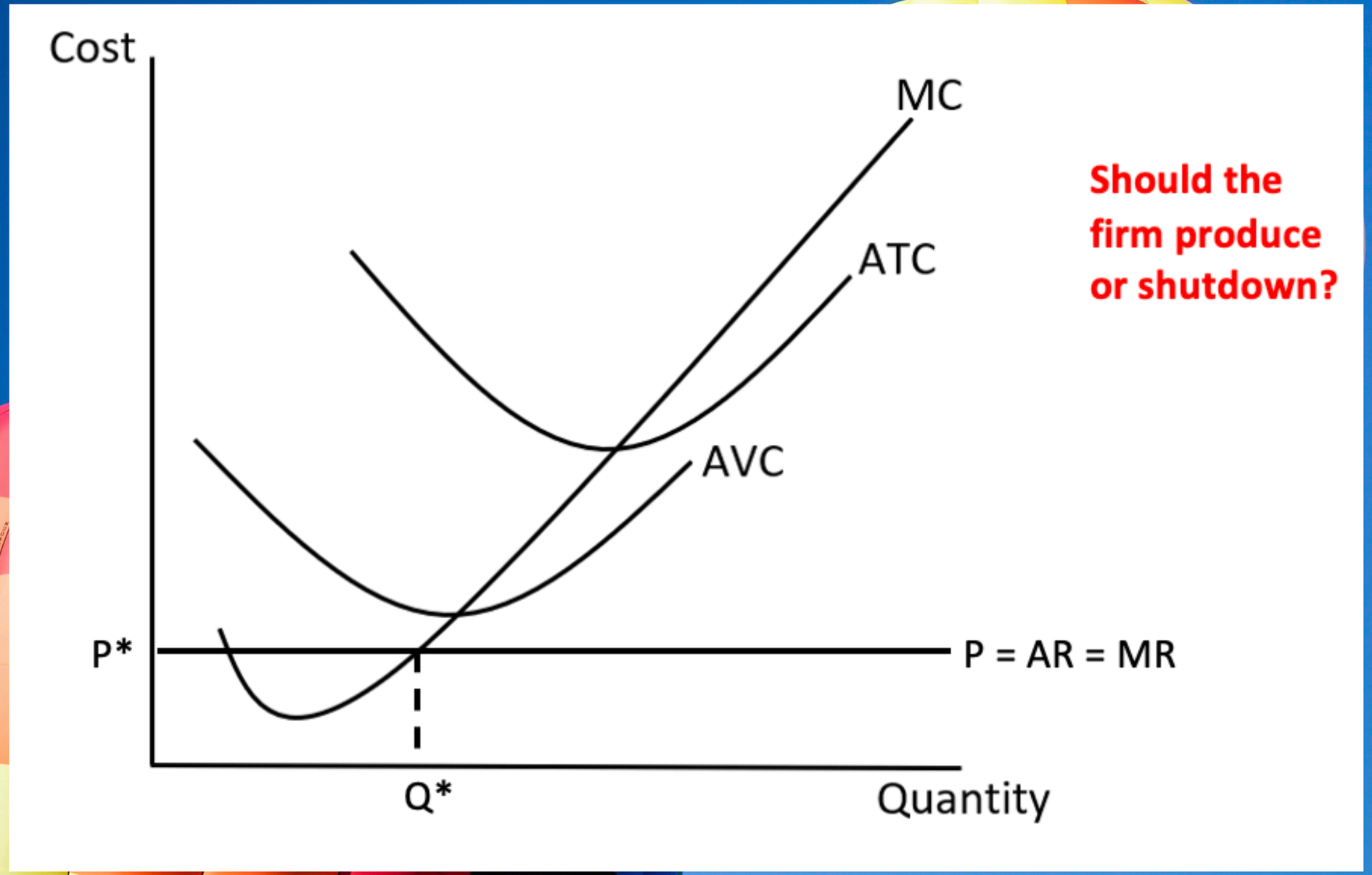
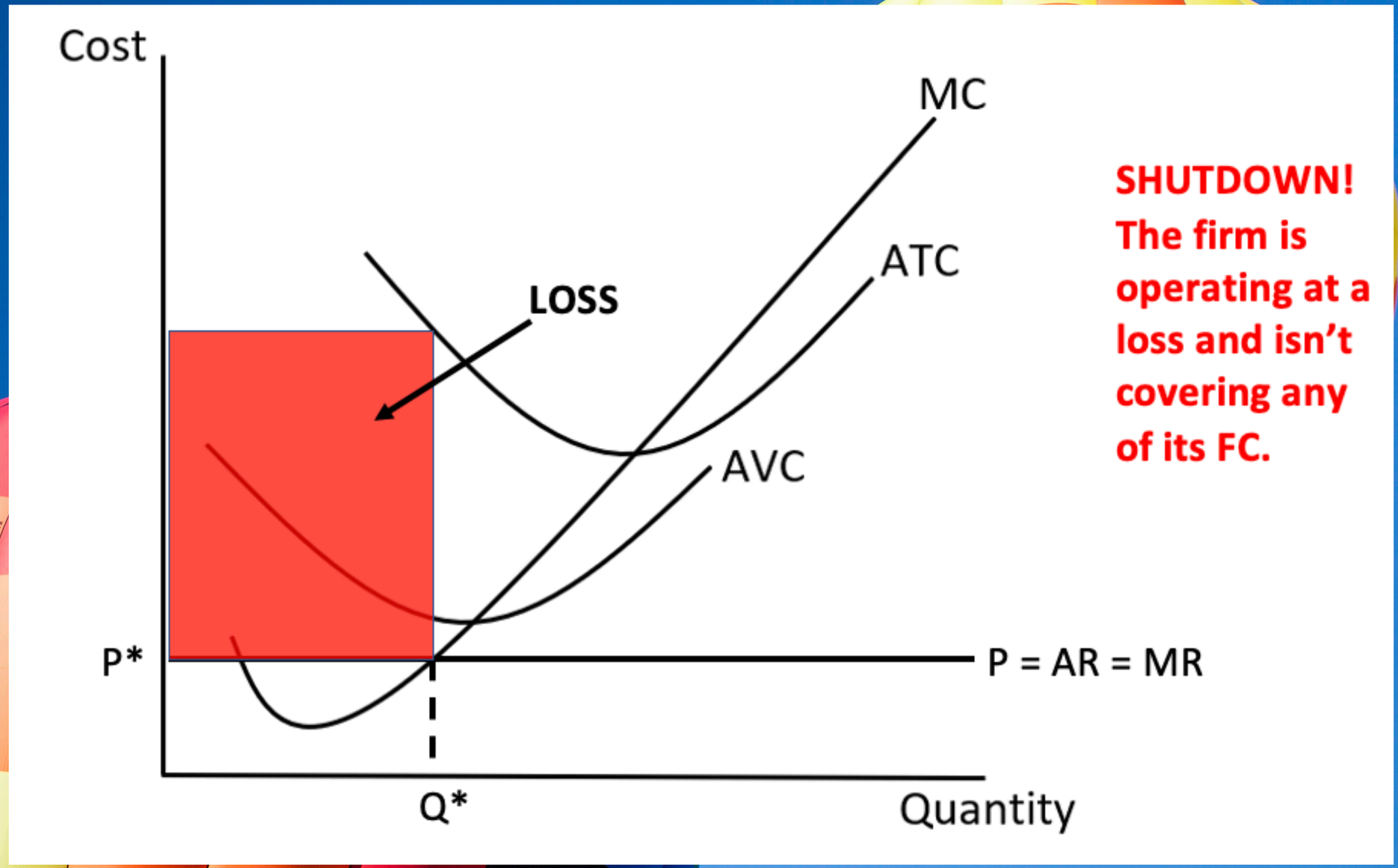

Cost
MC
ATC
AVC
P*
P = AR = MR
Q*
Quantity
Should the firm produce or shutdown?

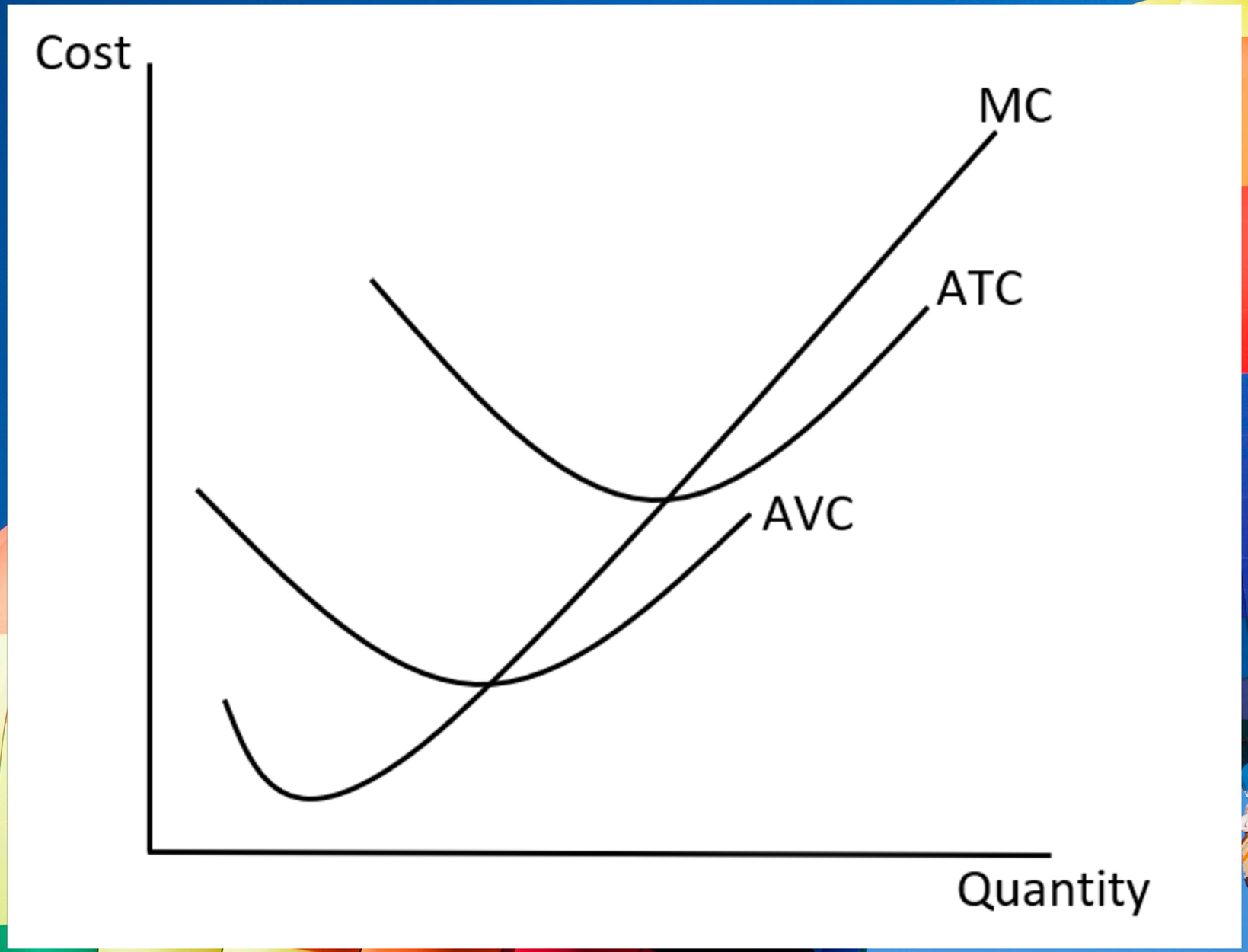

Cost
MC
ATC
LOSS
AVC
P*
P = AR = MR
Q*
Quantity
SHUTDOWN!
The firm is operating at a loss and isn't covering any of its FC.

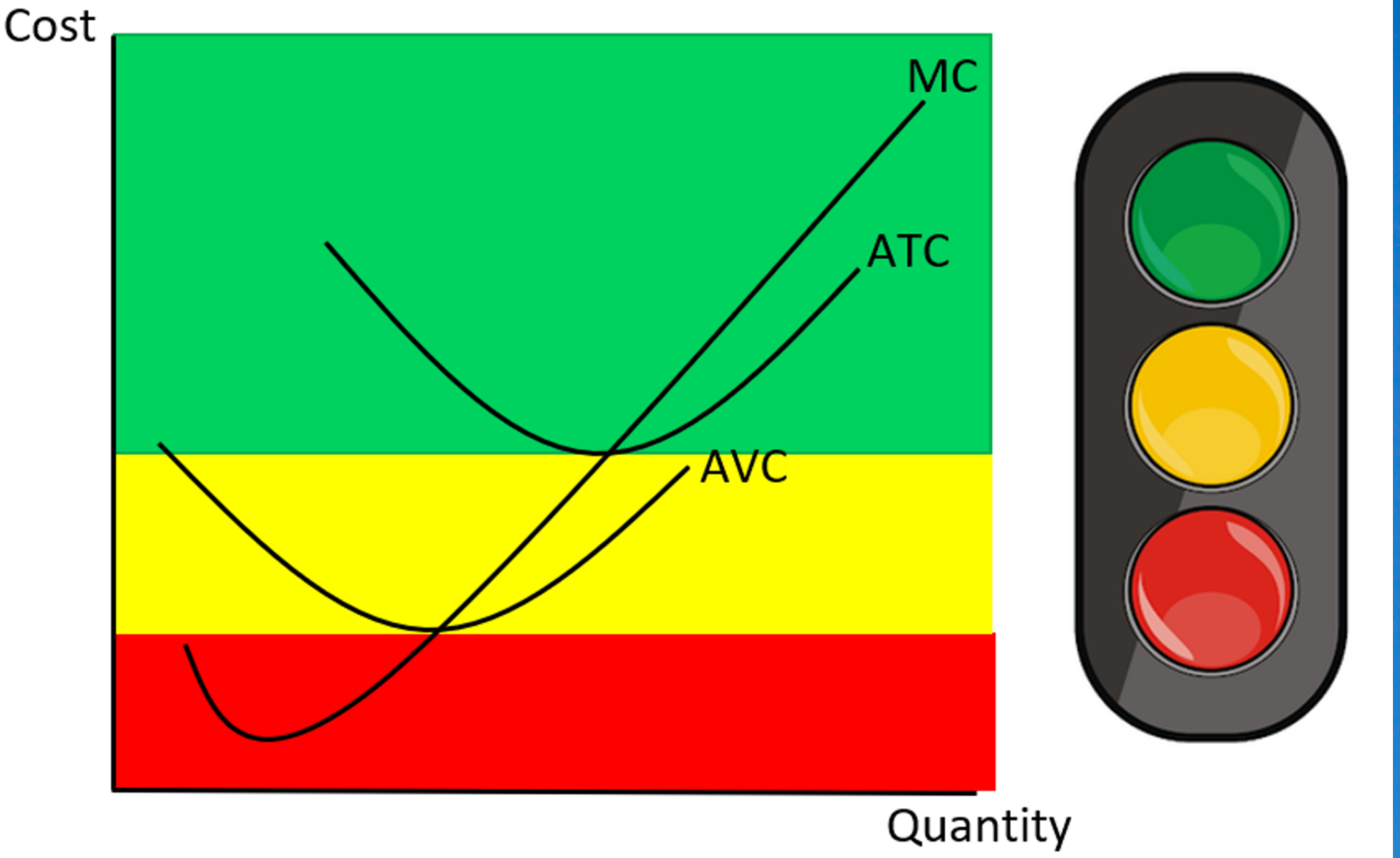
Shutdown Rule

- Basically, a firm will shut down if the price they can get for the good ***does not at least equal*** the variable costs associated with producing the good.
- Sunk Costs!
  - Fixed costs are sunk costs. We pay these no matter what.
  - Even if this means the firm loses money, they can cover some of their fixed costs.
  - Losing a little money is better than losing a lot of money.

Shutdown Rule

- If **P > AVC**, keep producing even if at a loss.
- If **P < AVC**, temporarily shutdown & wait for market conditions to change.


Cost
MC
ATC
AVC
Quantity

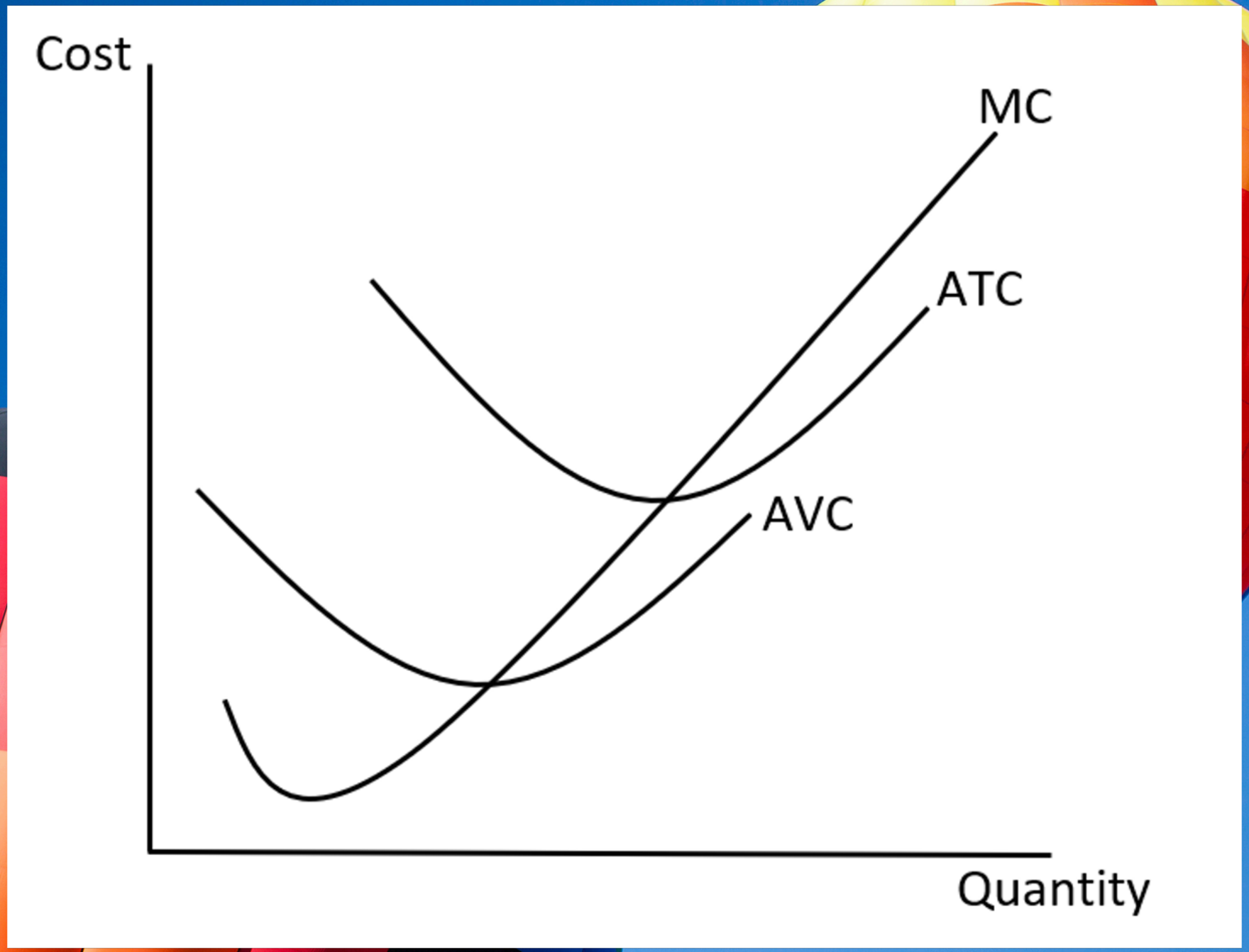

Cost
MC
ATC
AVC
Quantity

Implications of Profit-Maximization

- Profit-maximization does not necessarily imply that a firm makes profit.
  - Think of profit-maximization like a process.
- In the short-run, FC are Sunk Costs. They cannot be recovered.
- So, the firm will operate at a loss so long as P > AVC (or TR > VC) since it can cover some of its FC.

Implications of Profit-Maximization

- Remember in last class that we mentioned the efficient scale of production is where MC crosses ATC?
  - Why is the firm not producing there?
  - Firms are ***profit-maximizing***, not ***cost-minimizing***, by assumption.
- Now that firms are seeking profits, P is taken into account.
  - Are the profit-maximizing & cost-minimizing points ever the same?


Cost
MC
ATC
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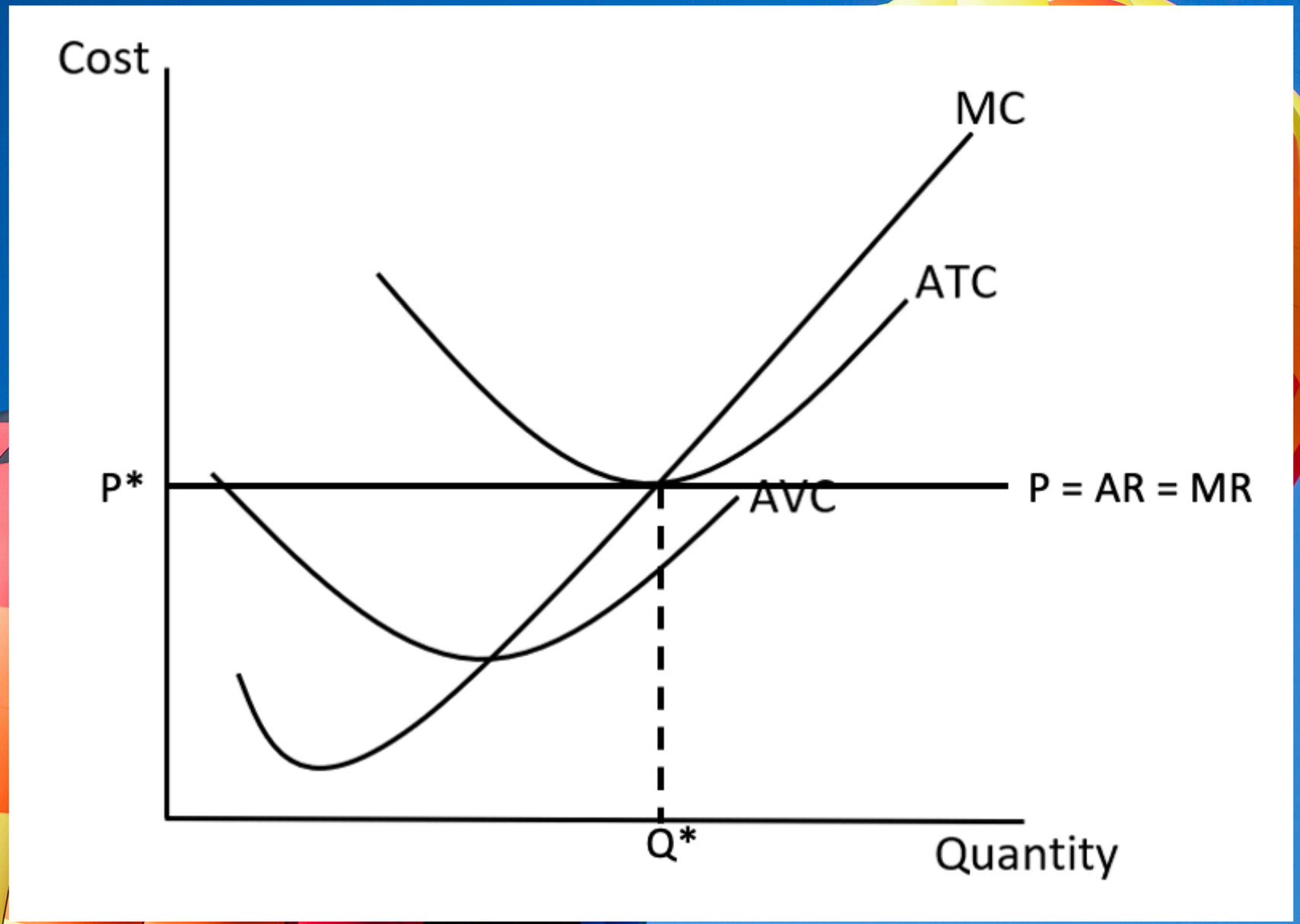
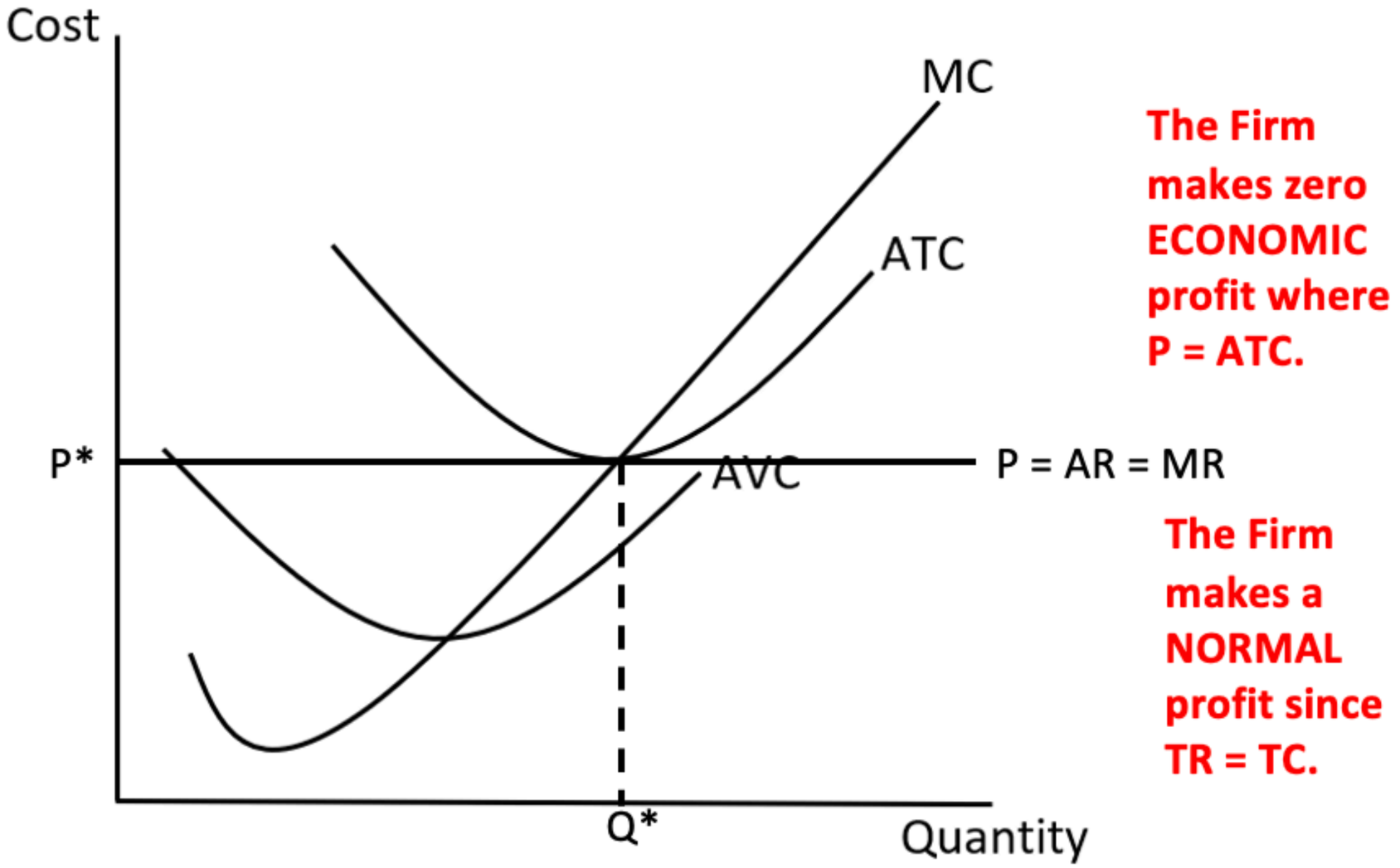
Quantity


Cost
MC
ATC
P*
AVC
P = AR = MR
Q*
Quantity


Cost
MC
ATC
AVC
P*
P = AR = MR
Q*
Quantity
The Firm makes zero ECONOMIC profit where P = ATC.
The Firm makes a NORMAL profit since TR = TC.

Implications of Profit-Maximization

- The profit-maximizing & cost-minimizing points are the same when P = ATC.
- At this point, the firm makes ***zero economic profit.***
- Zero economic profit is the same thing as ***normal profit.***

RECAP: Profit-Maximization

- If **MR > MC**, produce more.
- If **MR < MC**, produce less
- If **MR = MC**, profits have been maximized.
- These conditions are true for ALL firms.
- What is different about competitive firms?
  - Price takers. **P = AR = MR.**

Short- vs. Long-Run Insights

- Firms operate throughout some specific time period.
- Today, we focused on short-run decisions.
- But profit-maximization takes place in long-run contexts too.
- If a firm is making positive economic profits, what do we expect to happen?

End of class.
Thanks for your attention!