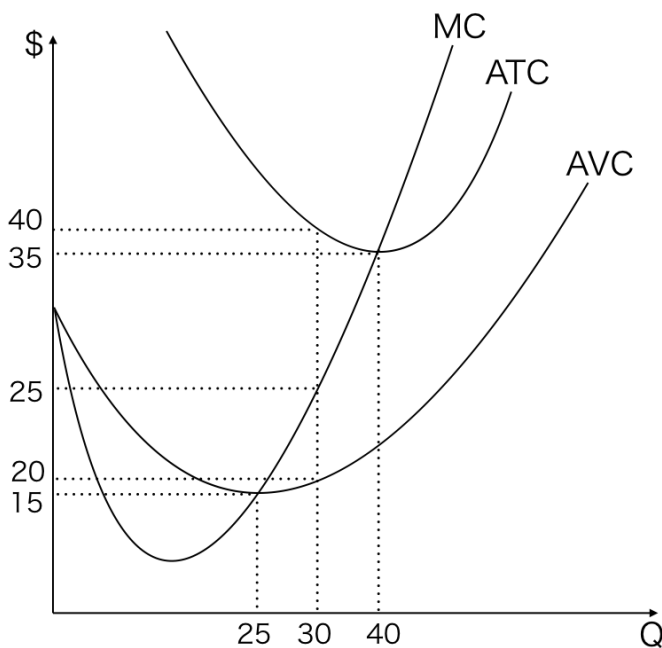# Discussion 8

Important Topics

- Cost Curves

- Profit Maximization

- Perfect Competition

- Shut-down/Break-Even Prices

- Supply Curve Derivation

Exercise

Exercise 1 William's winery has cost functions illustrated below, where Q denotes gallons of wine. Suppose that the wine market is perfectly competitive.

(a) Find the break-even price and the shut-down price.

(b) Draw the short-run supply curve on the graph.

(c) Calculate the fixed cost.

(d) If the price is $P = 25$, then what is William's profit?

Exercise 2 Consider a bakery with the following cost functions in a perfectly competitive bread market:

$$TC = q^2 + 4q + 5,$$
$$MC = 2q + 4,$$

where q denotes pounds of bread.

(a) What is the shut-down price for this bakery?

(b) Derive the short-run supply curve.

Suppose that there are 10 bakeries with the same cost functions in the bread market and that the market demand curve is given by $P = -Q_d + 40$.

(c) Find the short-run equilibrium in the bread market.

Exercise 3 You are working in a small construction company in a perfectly competitive housing market. You accidentally spilled coffee on an important file below, which summarizes the company's costs.

Q	TC	VC	FC	ATC	AVC	AFC	MC
0				—	—	—	—
1							50
2		200					
3				600			
4					600		
5	5000					120	

(a) Restore the file by filling all the blanks.

(b) If the market price is $P = 1200$, then what is the profit of the construction company?