Perfect Market Calculation Example

In a perfectly competitive market, industry demand for a product is given by the equation:

$$p = 50 - 0.05q$$

where $\boldsymbol{p}$ = price (£ t^{-1}) and $\boldsymbol{q}$ = quantity (t $month^{-1}$).

The typical company's average cost (£) is given by the equation:

$$AC = 300x^{-1} + 0.333x$$

where $\boldsymbol{x}$ is the quantity supplied by the average company (t $month^{-1}$).

(a) Calculate the minimum quantity that the typical company should supply.

(b) Calculate the minimum average total cost for the average company.

(c) Determine the typical company's supply curve. If 10 firms supply the perfect market determine the perfect market supply curve.

(d) Calculate the perfect market equilibrium price and output.

(e) Calculate the typical company's profit.