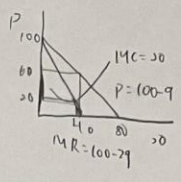
4. (A)

$TR = (100-q)q = 100q - q^2$

$MR = 100 - 2q$

$MC = 20$

$100 - 2q = 20 \quad q = 40 \quad P = 60$



$\pi = P \times q - TC(Q) = 40 \times 60 - (30 + 20 \cdot 40) = 1510$

(B) $\frac{40 \times 40}{2} = 800$

(C) $\frac{P-MC}{P} = \frac{60-20}{60} = 0.67$

(D) $\pi = TR - TC = Tq$

$= 100q - q^2 - (30 + 20q) - 10q$

$= -q^2 + 70q - 30$

$\text{最大} = \frac{d\pi}{dq} = -2q + 70 = 0 \quad q = 35 \quad P = 65$

$\pi = 2275 - 730 = 1545$

(E)

$\pi = -q^2 + 70q - 30 - \text{最大} \; -1.8q + 60 = 0 \quad q = 33.33 \quad P = 66.67$

$0.1(100q - q^2) \quad -0.9q^2 + 60q - 30$

$= -q^2 + 70q - 30 - 10q + 0.1q^2$

$= -0.9q^2 + 60q - 30$

$= -1111 + 2059.8 - 30$

$= 2222 - 696.6$

(F) $\pi = 1570 - 1000 = 570$

(G) $\pi = 1570(1 - 0.2) = 1570 \times 0.8 = 1256$

(H) $P = MC \quad 100 - q = 20 \quad q = 80 \; P = 20$

$\pi = 1600 - 1630 = -30$

5. $P = 4MC$

$\frac{P-MC}{P} = \frac{1}{\varepsilon} \Rightarrow \frac{4MC - MC}{4MC} = \frac{1}{\varepsilon} \Rightarrow \frac{3}{4} = \frac{1}{\varepsilon}$

$3\varepsilon = 4 \quad \varepsilon = \frac{4}{3}$

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7. $TR = 280q - q^2 \quad MR = 280 - 2q \quad MC_A = 4q_A \quad MC_B = 8q_B$

$280 - 2q = 4q_A \qquad 280 - 2q = 8q_B$

$q_A = 46.67 \quad P = 233.33 \qquad q_B = 28 \quad P = 252$