1 A　9 B
2 C　10 D
3 B　11 B
4 B　12 A
5 B　13 B
6 D　14 E
7 D　15 B
8 A　16 D

(一) $x = f(L,K) = AL^{\alpha}K^{\beta}$　$A, \alpha, \beta > 0$

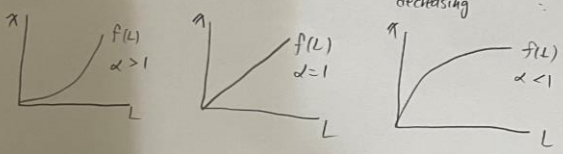
$MPP_L = dAL^{\alpha-1}K^{\beta} > 0$

$MPP_K = \beta AL^{\alpha}K^{\beta-1} > 0$

} no ridge lines

$\frac{\partial MPP_L}{\partial L} = (\alpha-1)\alpha AL^{\alpha-2}K^{\beta} \gtrless 0$ 若 $\alpha \gtrless 1$　increasing / constant / decreasing marginal returns

$\frac{\partial MPP_K}{\partial K} = (\beta-1)\beta AL^{\alpha}K^{\beta-2} \gtrless 0$ 若 $\beta \gtrless 1$　increasing / constant / decreasing

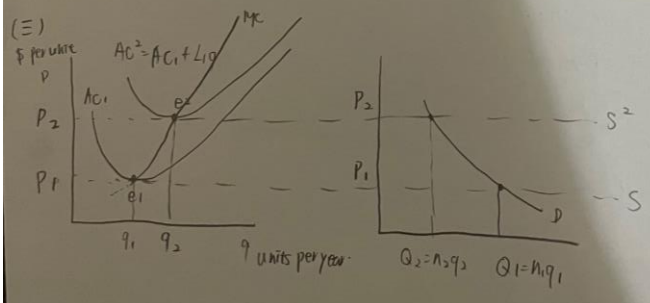


(二)

(1) 當生產函數平滑　生產者均衡滿足邊際產量均等法則，國內外工資不同，選擇不同生產技術

(2) 當生產函數折拗　即使國內外工資不同　生產者均衡可能仍是同一點，所以選擇相同生產技術

(三)



四：(A) AVC：10q　=> AVC 的極小值 = 0　短期 歇業價 = 0

(B) P=MC = 20q　$q = 0.05P$　廠商

$Q_S = 20P$　市場

(C) $Q_S = 20P = Q_d = 4000 - 5P$ => $25P = 4000$　$P = 160$　$Q = 3200$　$q = \frac{3200}{400} = 8$

(D) $Q_S = 20P = Q_d = 600 - 5P$ => $25P = 6000$　$P = 240$　$Q = 4800$　$q = \frac{4800}{400} = 12$

$TV = 240 \times 12 - 10(12)^2 - 1000 = 440$

(F) LAC 不動　新的長期均衡價 $P = 160$　廠商產量 $q = 8$　廠商數目 $\frac{4000}{8} = 500$

五 (A) $AFC = \frac{100}{5} = 20$

(B) $AVC = \frac{q^3 - 12q^2 + q}{q} = q^2 - 12q + 1$

$\frac{dAVC}{dq} = 2q - 12 = 0$　$q = 6$

(C) $q \le 6$ 時　AVC 遞減　MP_L 開始遞增

(D) $MC = \frac{dTC}{dq} = 3q^2 - 24q + 1$

$\frac{dMC}{dq} = 6q - 24 = 0$　$q = 4$

$q \le 4$ 時

六

(1) 若 K 和 L 同時增加 λ 倍 → λK 和 λL

$Q = 10K + 5L$　$F(\lambda K, \lambda L) = 10(\lambda K) + 5(\lambda L)$

$\lambda(10K + 5L) = \lambda Q$ → 固定規模報酬

(2) $MP_L = 5$　$MP_K = 10$　沒有遞減

(3) $MRTS = \frac{MP_L}{MP_K} = \frac{5}{10} = \frac{1}{2}$　邊際技術替代率固定