

B)  $\bar{x}$  و  $\bar{y}$

11, A "  $\bar{x}$  و  $\bar{y}$  "  $\bar{x} = \frac{1}{n} \sum x_i$  و  $\bar{y} = \frac{1}{n} \sum y_i$

الف)  $a = \frac{\min}{c=0} \Rightarrow m_s = \frac{-b}{ka} = \frac{-1}{1} = -1 \Rightarrow y_s = 1 \times \frac{1}{1} - \frac{1}{1} = 0 \Rightarrow$  ①

ب)  $a = -1 < 0 \Rightarrow \max \Rightarrow m_s = \frac{-b}{ka} = \frac{-1}{-1} = 1 \Rightarrow y_s = -1 \times 1 + 1 = 0 \Rightarrow$  ②

ج)  $a = 1 > 0 \Rightarrow \min \Rightarrow m_s = \frac{a}{k} = 1 \Rightarrow y_s = 1 \times \frac{1}{1} - \frac{1}{1} + 1 = 1 \Rightarrow$  ③

د)  $a = -1 \Rightarrow \max \Rightarrow m_s = 1 \Rightarrow y_s = -1 \times 1 + 1 - 1 = -1 \Rightarrow$  ④

$x^2 - x - 1 = 0 \Rightarrow \alpha, \beta \Rightarrow \alpha + \beta = 1 \quad \alpha - \beta = \frac{\sqrt{1+4}}{2} = \sqrt{5} \Rightarrow$   $\frac{1}{\sqrt{5}}$  ⑤  
 ب)  $\alpha^2 + \beta^2 = 3^2 - 1 = 10 \Rightarrow \alpha^2 - \beta^2 = 1 + 9 = 10 \Rightarrow \alpha^2 - \beta^2 = (\alpha - \beta)(\alpha + \beta) = \sqrt{5} \times 1 = \sqrt{5}$  ⑥

$\Delta < 0 \Rightarrow$   $x^2 - ax + a = 0 \Rightarrow m = 1 \Rightarrow$   $\frac{a}{1} < 0 \Rightarrow a < 0$  ⑦  
 $a^2 - ka < 0 \Rightarrow a(a-k) < 0 \Rightarrow \frac{a}{1-k} < 0 \Rightarrow a \in (0, k)$  ⑧

$km^2 - km - a = 0 \Rightarrow \alpha^2 + \beta^2 - ka = 0 \Rightarrow$   $\alpha^2 + \beta^2 = ka$  ⑨  
 $\alpha + \beta = k \Rightarrow \alpha^2 + \beta^2 = k^2 - 2\alpha\beta = ka \Rightarrow k^2 - 2\alpha\beta = ka \Rightarrow \alpha\beta = \frac{k^2 - ka}{2}$  ⑩  
 $\alpha^2 + \beta^2 - \alpha + \frac{a}{k} = 0 \Rightarrow \alpha^2 + \beta^2 + \frac{a}{k} = 0 \Rightarrow ka + \frac{a}{k} = 0 \Rightarrow a = -k^2$  ⑪  
 $\alpha^2 - ka + k^2 = 0 \Rightarrow (\alpha - k)^2 = 0 \Rightarrow \alpha = k$  ⑫

$y_A = y_B \Rightarrow m_s = \frac{m_A + m_B}{2} = \frac{1 + (-1)}{2} = 0 \Rightarrow y_s = 0 - 1 = -1 \Rightarrow$   $\frac{a}{k} = -1 \Rightarrow a = -k$  ⑬  
 $y = a(m - m_s)^2 + y_s = a(m - 0)^2 - 1 = am^2 - 1$  ⑭  
 $1 = 4a - 1 \Rightarrow a = \frac{1}{2} \Rightarrow y = \frac{1}{2}x^2 - 1$  ⑮

$am^2 - am - b = 0 \Rightarrow \alpha^2 + \beta^2 - k\alpha - k\beta = 0 \Rightarrow$   $\alpha^2 + \beta^2 = k(\alpha + \beta) = k^2$  ⑯  
 $9\alpha^2 - 9\beta - b = 0 \Rightarrow 9(\alpha^2 + \beta^2) - 9k\alpha - 9k\beta = 9k^2 - 9k\alpha - 9k\beta = 0 \Rightarrow \alpha + \beta = k$  ⑰  
 $9\alpha^2 - 9\alpha - b = 0 \Rightarrow 9\alpha^2 - 9\alpha = b$  ⑱  
 $9(\alpha^2 + \beta^2) - 9k\alpha - 9k\beta = 9k^2 - 9k\alpha - 9k\beta = 0 \Rightarrow \alpha + \beta = k$  ⑲  
 $9\alpha^2 - 9\alpha - b = 0 \Rightarrow 9\alpha^2 - 9\alpha = b$  ⑳

$m_s = \frac{-b+1}{1} = -1 \Rightarrow y_s = \frac{1}{1} \Rightarrow y = a(m - m_s)^2 + y_s = a(m + 1)^2 + 1$  ㉑

$\beta = 1 + k + \frac{1}{k} = \frac{k^2 + k + 1}{k} \Rightarrow y = 1(m + 1)^2 - \frac{1}{k} \in 1 = ka \Rightarrow a = \frac{1}{k}$  ㉒

$m^2 + 4m + a = 0 \Rightarrow \alpha\beta = a \Rightarrow a > 0$  ㉓  
 $\alpha^2 + 4\alpha + a = 0 \Rightarrow \alpha^2 + 4\alpha = -a$  ㉔  
 $4\alpha^2 + 4\alpha + a = 0 \Rightarrow \alpha^2 + \alpha + \frac{a}{4} = 0$  ㉕  
 $4\alpha^2 + 4\alpha + a = 0 \Rightarrow \alpha^2 + \alpha + \frac{a}{4} = 0$  ㉖

$4m^2 - (m+1)m + 1 = 0 \Rightarrow 3m^2 - m + 1 = 0 \Rightarrow$   $\frac{1}{\sqrt{3}} + \frac{1}{\sqrt{3}} = \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}}$  ㉗

$\alpha\beta = \frac{1}{4}$  ㉘  
 $x + \beta = \frac{m+1}{4}$  ㉙  
 $\frac{m+1}{4} = \frac{1}{4} \Rightarrow m+1 = 1 \Rightarrow m = 0$  ㉚  
 $-m^2 + 4m + 1 = 0 \Rightarrow m^2 - 4m - 1 = 0 \Rightarrow m = -1$  ㉛

$P = m_1 m_2 = (-1)$  ㉜

$$xS = \frac{1-\Delta}{r} = -r \rightsquigarrow f(n) = a(n+r)^r - \frac{1}{r} \rightsquigarrow \text{عضو از مبدا ...}$$

$$f(1) = \frac{r}{r} \rightsquigarrow ra - \frac{1}{r} = \frac{r}{r} \rightarrow a = \frac{1}{r}$$

$$f(1) = \beta \rightsquigarrow \frac{1}{r}(r)^r - \frac{1}{r} \rightsquigarrow \frac{r}{r} - \frac{1}{r} = r \rightsquigarrow \boxed{\beta = r}$$

$$r\alpha^r + r\beta^r = \frac{\Delta}{r}(\alpha^r + \beta^r) + \frac{1}{r}(\alpha^r - \beta^r) = 12\sqrt{r} + 15$$

$$\frac{\Delta}{r}(3^r - 2^r) + \frac{1}{r}(5)(\frac{\sqrt{\Delta}}{12}) = 12\sqrt{r} + 15$$

$$\frac{\Delta}{r}(34 - 2a) + \frac{1}{r}(-4)(\sqrt{14 - 2a}) = 12\sqrt{r} + 15$$

$$90 - 5a + 4\sqrt{14 - 2a} = 12\sqrt{r} + 15 \rightarrow 90 - 5a = 15 \rightarrow a = 15$$