

$$\text{الف) } 6x^2 - 5x - 6 = 0 \Rightarrow x^2 - 5x - 3 = 0 \Rightarrow (x-9)(x+4) \Rightarrow \left(\frac{9}{6}\right) \left(\frac{4}{6}\right)$$

$$\text{ب) } 3x^2 - 11x - 2 = 0 \Rightarrow x^2 - 11x - 9 = 0 \Rightarrow (x-9)(x+1) \Rightarrow \left(\frac{9}{3}\right) \left(\frac{1}{3}\right)$$

$$\text{ج) } 4x^2 - 4x - 3 = 0 \Rightarrow x^2 - 4x - 12 = 0 \Rightarrow (x-6)(x+2) \Rightarrow \left(\frac{6}{4}\right) \left(\frac{2}{4}\right)$$

$$\text{د) } 2x^2 - 5x - 12 = 0 \Rightarrow x^2 - 5x - 12 = 0 \Rightarrow (x-1)(x+12) \Rightarrow \frac{1}{2} \left(\frac{1}{2}\right) \left(\frac{12}{2}\right)$$

$$\text{الف) } x^2 - 5x - 14 = 0 \Rightarrow (x-7)(x+2) \Rightarrow (7) (2)$$

$$\text{ب) } 2x^2 + 5x - 3 = 0 \Rightarrow \frac{-5 \pm \sqrt{1}}{4} \Rightarrow \frac{-5-1}{4} = -\frac{6}{4} = -\frac{3}{2} \quad \frac{-5+1}{4} = -1$$

$$\text{ج) } x^2 + 2x + 3 = 0 \Rightarrow 4 - 4 \times 1 \times 3 \Rightarrow \Delta < 0 \Rightarrow \text{X}$$

$$\text{د) } 2x^2 + 3x - 2 = 0 \Rightarrow \frac{-3 \pm \sqrt{17}}{4} \Rightarrow \frac{-3 + \sqrt{17}}{4} \quad \frac{-3 - \sqrt{17}}{4}$$

$$A = \{1, 2, 3\} \quad B = \{2, 3\}$$

$$\{(1, 2) (1, 3) (2, 2) (2, 3) (3, 2) (3, 3)\} - \{(2, 2) (2, 3) (3, 2) (3, 3)\} \\ = \{(1, 2) (1, 3)\}$$

$$\text{الف) } f(x) = \{(3, m^2) (2, 1) (-3, m) (-2, m) (3, m+2) (m, 4)\}$$

$$m^2 = m + 2 \Rightarrow m^2 - m = 2 \Rightarrow m \rightarrow 2 \text{ یا } -1$$

$$\text{ب) } f(x) = (3, m^2) (2, 1) (m, 4) (3, m+2) (-1, m) (-1, 3) \quad \text{با توجه به } -1 \checkmark$$

$$m^2 = m + 2 \Rightarrow m^2 - m = 2 \Rightarrow m \rightarrow 2 \text{ یا } -1$$

$$P(x) = \{(1, a^r)(1, ra-r)(a^r, ra+r)\} \Rightarrow a^r = ra-r \Rightarrow a^r - ra + r = 0 \quad -\text{O}$$

$$(a-r)(a-1) \Rightarrow a = K \quad \rightarrow a = 1 \times$$

$$\left. \begin{array}{l} P(0) = r - 1 = 0 \\ P(1) = a + b = 0 \\ P(r) = 1 \\ P(r) = ra + b = 1 \\ a = -b \end{array} \right\} \begin{array}{l} ra + b = 1 \\ a + b = 0 \end{array} \Rightarrow \begin{array}{l} a = 1 \\ b = -1 \end{array} \Rightarrow a \times b = 1 \times -1 = -1 \quad -\text{f}$$

$$P(x) \left\{ \begin{array}{l} rx - r \quad x \geq k \\ r - rx \quad x \leq k \end{array} \right\} \Rightarrow x = k \Rightarrow rk - r = r - rk \Rightarrow 0k = 0 \quad -\text{V}$$

$$k = \frac{0}{0}$$

$$\text{الف) } y^r - 4y = x^r - 8x + r \Rightarrow (x-r)(x-1) \Rightarrow x=1 \Rightarrow y^r - 4y = 0 \Rightarrow y^r = 4y - 1$$

$$\Rightarrow y^r = 4 \Rightarrow y = \pm \sqrt{4}$$

$$\underline{\underline{= 2 \text{ و } -2}}$$

$$\text{ب) } |x| + |y| = r \Rightarrow x=0 \Rightarrow |y| = r \Rightarrow y = \pm r \quad \times$$

$$\text{ج) } |y| = \sqrt{1 - \cos x} \Rightarrow \cos x = 0 \Rightarrow |y| = \sqrt{1} \Rightarrow y = \pm 1 \quad \times$$

$$\text{د) } y^r + x^r + rx + 1 = 0 \Rightarrow y^r + (x+1)^r = 0 \Rightarrow y^r = 0 \Rightarrow y = 0 \quad \checkmark$$

$$(x+1)^r = 0 \Rightarrow x = -1 \quad \underline{\underline{= -1}}$$

$$\text{هـ) } \sqrt[r]{y} + x^r = rx - r \Rightarrow \left\{ \begin{array}{l} \sqrt[r]{y_1} = -x_1^r + rx_1 - r \\ \sqrt[r]{y_2} = -x_2^r + rx_2 - r \end{array} \right\} \begin{array}{l} (x_1 = x_2) \\ \sqrt[r]{y_1} = \sqrt[r]{y_2} \Rightarrow y_1 = y_2 \end{array} \quad \checkmark$$

$$\text{و) } \left. \begin{array}{l} y_1^r + ry_1 = 0 \\ y_2^r + ry_2 = 0 \end{array} \right\} \begin{array}{l} y_1^r - y_2^r + r(y_1 - y_2) = 0 \\ \Rightarrow (y_1 - y_2)(y_1^r + y_1 y_2 + y_2^r) + r(y_1 - y_2) = 0 \\ \Rightarrow (y_1 - y_2)(y_1^r + y_1 y_2 + y_2^r + r) = 0 \\ \Rightarrow y_1^r + y_1 y_2 + y_2^r + r > 0 \Rightarrow y_1 - y_2 = 0 \Rightarrow y_1 = y_2 \end{array} \quad \checkmark$$

$$\underline{\underline{= 1 \text{ و } -1}} \quad \text{s.a.m}$$

$$\text{الف) } x \sin y = y \sin x \Rightarrow x = x \Rightarrow x \sin y = 0 \Rightarrow \sin y = 0 \text{ اذ لا ف -1.}$$

X

$$\text{ب) } \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \Rightarrow x = y \Rightarrow \sqrt{-} \text{ تابع اسـ}$$