

$$x=1 \rightarrow f(x) = x-1 \quad (1)$$

(4)

$$1 + x = (1)$$

$$x=2 \rightarrow f(x) = (x)$$

(5)

$$(\sqrt[3]{x}-1)^3 + 9(\sqrt[3]{x}-1)^2 + 12(\sqrt[3]{x}-1) = \quad (x)$$

$$x - 3x + 9\sqrt[3]{x} + 12\sqrt[3]{x} + 12\sqrt[3]{x} - 12 + 9\sqrt[3]{x} + 12 - 12\sqrt[3]{x} = -10$$

$$(\sqrt[3]{x}+1)^3 - 9(\sqrt[3]{x}+1)^2 + 12(\sqrt[3]{x}+1) =$$

$$x + 1 + 9\sqrt[3]{x} + 12\sqrt[3]{x} - 9\sqrt[3]{x} - 18 - 12\sqrt[3]{x} + 12\sqrt[3]{x} + 12 = 10 \rightarrow \frac{10}{10} = -2$$

(1)

$$\left(\sqrt{x-1} + \sqrt{x+1} \right)^2 = x-1 + 2\sqrt{x-1}\sqrt{x+1} + x+1 = 2x + 2\sqrt{x^2-1}$$

$$f(x) = \sqrt{(x-1)+1} = \sqrt{x} + 1$$

$$g(x) = \sqrt{(x-1)-1} = \sqrt{x-2}$$

$$x \geq 1 \rightarrow \sqrt{x-1} = a + b\sqrt{x+c} \quad \checkmark$$

$$\frac{a+b}{c} = \frac{1}{x}$$

$$1 \leq x \leq 1 \rightarrow \sqrt{x-1} = a + b\sqrt{x+c}$$

$$\frac{g}{f} = (0, 4) \left(1, -\frac{1}{2} \right)$$

$$D_f = \mathbb{R} - \{1, 2\} \quad (4)$$

$$f(x) = (x-1)(x-2) \quad x^2 - 3x + 2 = 0$$

$$(x-1)(x-2) = 0 \quad x = 1, 2$$

$$f(x) = \{(\sqrt{2}, -1), (1, 2), (-1, 4)\} \rightarrow \left(\frac{1}{\sqrt{2}}, -1 \right), \left(\frac{1}{2}, -1 \right), \left(\frac{1}{4}, -1 \right)$$

$$f(x) = \{(1, -1), (4, -1), (16, 2), (1, 4)\} \rightarrow \text{مجموع}$$

$$1/g(x) + 1 = \{(-1, 14), (1, 2), (4, 9), (-1, 1)\} \quad (1)$$

$$\frac{1}{g} = \{(1, -1), (4, -1)\}$$

PASARGAD

DATE:

$$\frac{(a^r, r)(a^r + \alpha r + 14)}{a^r} \geq 0$$

$$Df = [-r, 0] \cup [r, +\infty)$$

(2)

$$\begin{array}{c} -\infty \quad 0 \quad r \\ -\phi + \phi - \phi + \end{array}$$

$$10. \text{ ب) } \left\{ \begin{array}{l} a^r = 1 \rightarrow a = \pm 1 \\ a^r = r \rightarrow a = \pm r \\ a^r = r \rightarrow a = \pm r \\ a^r = -1 \rightarrow x \end{array} \right. \rightarrow \left\{ (\pm 1, r) (\pm \sqrt{r}, -1) (\pm r, r) \right\}$$