

$$y = -\frac{1}{2}x^2 + \frac{3}{2}x + 1 \quad \text{رأس} \left| \begin{array}{l} \frac{3}{2} \times \frac{1}{2} \rightarrow \frac{3}{4} \\ \frac{1}{2} \times \frac{1}{2} \rightarrow \frac{1}{4} \end{array} \right. \quad x \rightarrow \frac{3}{2}x$$

$$-\frac{b}{2a} = \frac{-\frac{3}{2}}{-\frac{1}{2}} = \frac{3}{2} \quad \left\{ \begin{array}{l} \frac{1}{2} \left(-\frac{3}{2}x^2 + \frac{3}{2}x + 1 \right) = x \rightarrow -\frac{3}{4}x^2 + \left(\frac{3}{4} - \frac{1}{2} \right)x + 1 = 0 \\ -\frac{\Delta}{4a} \Rightarrow -\frac{\frac{9}{4} - \frac{1}{4}}{-\frac{1}{2}} = 3 \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{2}{1} \end{array} \right. \quad \begin{array}{l} \text{ن} = 3 \\ \text{ن} = 1 \end{array}$$

معادله سهمی بر حسب رأس آن با ضریب $y = -\frac{1}{2}(x-2)^2 + 3$

$$\text{رأس} \left| \begin{array}{l} 1 \times \frac{1}{2} \rightarrow \frac{1}{2} \\ 1 \times \frac{1}{2} \rightarrow \frac{1}{2} \end{array} \right. \quad \begin{array}{l} -1 \left(\frac{1}{2} \right) - \frac{1}{2} = \alpha \\ -1 \left(\frac{1}{2} \right) - \frac{1}{2} = \beta \end{array}$$

$$\alpha\beta = -1 \times -\frac{1}{2} = \frac{1}{2} \quad \text{جواب} \quad \boxed{\frac{1}{2}}$$

$$g(n) = -\left(3 - \sqrt{2(n+1)}\right) + 5$$

$$2 + \sqrt{2n+2} = \frac{5}{2} \rightarrow \sqrt{2n+2} = \frac{3}{2} \rightarrow 2n+2 = \frac{9}{4} \rightarrow 2n = \frac{1}{4} \rightarrow n = \frac{1}{8} \quad \text{جواب}$$

$$f(x-1) + g(x+1)$$

$$(a+1, 5) \cap [-2, b-1] = (-2, 5)$$

$$\begin{array}{l} a+1 = -2 \\ a = -3 \end{array} \quad \begin{array}{l} b-1 = 5 \\ b = 6 \end{array} \Rightarrow a-b = \boxed{-9}$$

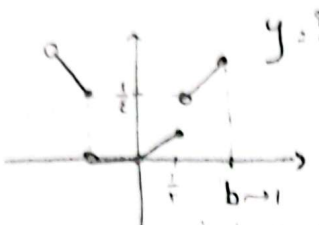
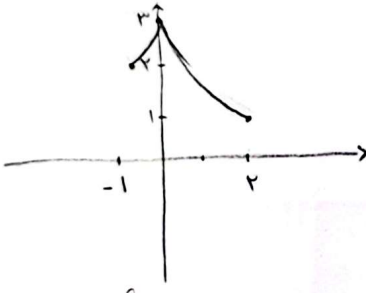
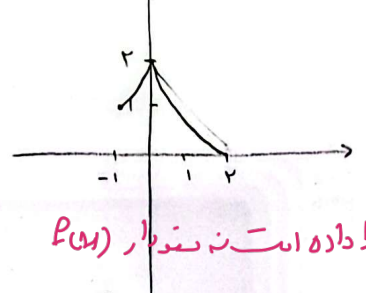
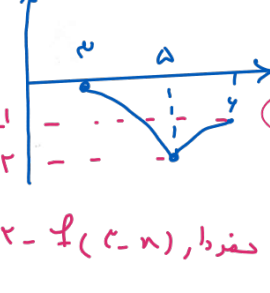
$$R_f = [-1, 2]$$

$$y_2 = \sqrt{|2f(x) - 3|}$$

$$D_f \Rightarrow [-1, 2] \xrightarrow{\div 2} [-1, 3] \quad R_{f_2} \Rightarrow [-1, 2] \xrightarrow{(-2)(-3)} [-5, 1] \xrightarrow{\sqrt{\cdot}} [1, 5]$$

$$\left. \begin{array}{l} \text{دامنه} \Rightarrow [-1, 3] \\ \text{بر} \Rightarrow [1, \sqrt{5}] \end{array} \right\} \quad \text{جواب}$$

$$-3 \leq x \leq 5 \rightarrow -\frac{3}{2} \leq \frac{x}{2} \leq \frac{5}{2} \rightarrow -\frac{1}{2} \leq \frac{x}{2} + \frac{1}{2} \leq \frac{3}{2} \quad \text{Def. } \left[-\frac{1}{2}, \frac{3}{2}\right]$$

$y = \frac{x}{a} [ax] \cdot \frac{1}{a} [a] \leq \frac{1}{r}$  $b \rightarrow 1$ $-\frac{x}{r} [-rx]$ $-\frac{1}{r} x [-rx] \rightarrow -\frac{1}{r} x - r = -\frac{1}{r}$ $-\frac{1}{r} x [-rx] \rightarrow -\frac{1}{r} x - 1 \rightarrow \frac{1}{r} \rightarrow -\frac{1}{r} x - 1 / \frac{1}{r}$	راه حل در بنویس ۴ ۲
$g(x) = -\log_r^{-x+1} + x$ $g(-1) + g(-4r) \Rightarrow -\log_r^{14} + x - \log_r^{44} + x = -4$ جواب	۲ ۷
 $f(x-1)$  $f(x-1)-1$  مقدار $f(x-1) = 2$ را داده است مقدار $f(x)$	۱۲۵ ۱
$g(x) = \left \frac{(x-2)+1}{2(x-2)+1} \right + 1 \rightarrow \left \frac{x-1}{2x-3} \right + 1$ $\left \frac{x-1}{2x-3} \right + 1 + x < 0 \rightarrow \left \frac{x-1}{2x-3} \right < -x-1$ $x < 0 \rightarrow \frac{1-x}{2x-3} = \frac{(x+1)}{-x-1} \rightarrow 2x^2 - x - 3 = 0$ $x = \frac{1 \pm \sqrt{1+24}}{4} = \frac{1 \pm 5}{4}$ $x = 1.5$ or $x = -1$ $x \in (-\infty, -\sqrt{2})$	۲ ۹
$f(x) = a(x-2)^3 + 2v \rightarrow (0,0) \rightarrow 0 = a(-2)^3 + 2v \rightarrow a = \frac{2v}{8}$ $f(x) = \frac{v}{4}(x-2)^3 + 2v$ $f(x) - 2v \leq 0 \rightarrow f(x) \leq 2v$ $D_g \in [0, \frac{1}{4}] \rightarrow \frac{v}{4}(x-2)^3 + 2v \leq \frac{1}{4}$ $x \leq \frac{1}{4} \leftarrow x-2 \leq \frac{1}{4} \leftarrow (x-2)^3 \leq \frac{1}{4}$	۲ ۱۰