

$$f(x) = K \rightarrow f(x) = x^r + 1 + rx + \frac{1}{2}x^2 + 1 - rx + \frac{mx^r}{-9} + \frac{nx}{-9} + mn = 1 \cdot x^r + mx^r - rx + nx + r + mn$$

$$m = -1, n = r$$

$$g(x) = \left\{ (r, -1), (r, p+1), \left(\frac{p+r}{-9}, -1 \right), (-9, p+K) \right\} \quad \begin{matrix} p+1 = -1 \\ p = -11 \end{matrix}$$

$$p+K = -1 \rightarrow K = 1$$

$$m+n+p+K = -1 + r + 1 - 11 = -9$$

$$\text{الف) } x^r - rx^r - \lambda = 0 \rightarrow x^r = t \quad t^r - rt - \lambda = 0 \quad (t-r)(t+r) = 0 \quad t < \frac{r}{-2} \text{ غيبي}$$

$$x^r = r \rightarrow x < \frac{-r}{r} \quad \frac{x-r}{x^r - rx^r - \lambda} \geq 0 \quad \frac{-r}{-\frac{r}{r} + \frac{r}{r} +} \quad D_f = (-r, +\infty) - \{r\}$$

$$\text{ب) } r - r[-x] = 0 \quad [-x] = r \rightarrow r \leq -x < r \rightarrow -r \geq x > -r \quad D_f = R - (-r, -r]$$

$$\text{الف) } x(x^r - 1) \geq 0 \rightarrow \frac{-1}{-1+} \frac{1}{-1+} \quad |x| + x > 0 \quad \begin{matrix} R^+ \checkmark \\ \cdot \alpha \\ R^- \alpha \end{matrix}$$

$$([-1, 0] \cup [1, +\infty)) \cap (0, +\infty) \Rightarrow D_f = [1, +\infty)$$

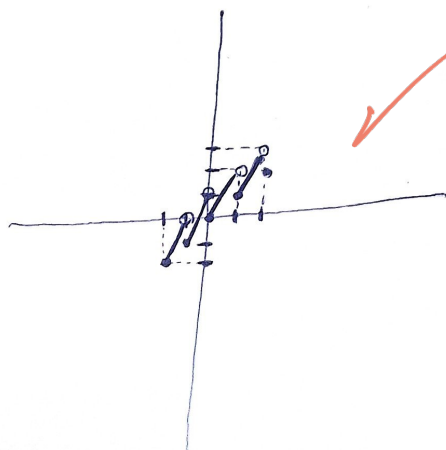
$$\text{ب) } |x-r| - x^r \geq 0 \rightarrow \begin{matrix} x-r \geq x^r \rightarrow x^r - x + r \leq 0 \\ x-r \leq -x^r \rightarrow x^r + x - r \leq 0 \rightarrow (x+r)(x-1) \leq 0 \end{matrix}$$

$$|x| - 1 \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1 \quad D_f = [-r, 1) - \{-1\}$$

$$||x-r|-1| - K = 0 \rightarrow ||x-r|-1| = K \quad \begin{matrix} |x-r| = K+1 \rightarrow \begin{matrix} x = K+r \\ x = -K+1 \end{matrix} \\ |x-r| = -K+1 \rightarrow \begin{matrix} x = -K+r \\ x = K+1 \end{matrix} \end{matrix}$$

$$K+1 = -K+1 \rightarrow K = 0 \text{ غيبي} \quad K+1 = -K+r \rightarrow K = 1$$

$$\begin{cases} -r \leq x < -1 \rightarrow [x] = -r \rightarrow rx+r \\ -1 \leq x < 0 \rightarrow [x] = -1 \rightarrow rx+1 \\ 0 \leq x < 1 \rightarrow [x] = 0 \rightarrow rx \\ 1 \leq x < r \rightarrow [x] = 1 \rightarrow rx-1 \end{cases}$$



$$f(x) = x \rightarrow f(x) = \frac{(x-1)(x-3)}{x+1} + b$$

آزمین نوری

$$\begin{cases} a=-1 \rightarrow x-1+b=x \rightarrow b=1 \rightarrow a-b=-2 \\ a=-1 \rightarrow x-3+b=x \rightarrow b=3 \rightarrow a-b=-4 \end{cases}$$

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$$\begin{array}{r} x^2 + 1x^2 - x - 1 \quad | \quad x-1 \\ -x^2 + x^2 \\ \hline 1x^2 - x - 1 \\ 1x^2 - 1x \\ \hline 1x - 1 \\ 1x - 1 \\ \hline 0 \end{array}$$

$$\frac{(x-1)(x+1)(x+2)}{(x-1)(x+1)} = x+2 \rightarrow C=2 \rightarrow g(x) = x+2$$

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$$g(1)=2 \rightarrow f(1)=2 \Rightarrow \frac{a+2}{1+b}=2 \quad a+2=2+2b$$

$$g(-1)=1 \rightarrow f(-1)=1 \Rightarrow \frac{-a+2}{-1+b}=1 \rightarrow -a+2=-1+b$$

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$$\begin{cases} -a+2b=1 \\ a+b=2 \end{cases} \Rightarrow fb=2 \quad b=1/2 \quad b+C=2 \quad 1/2$$

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$$D_f \cap D_g = [-1, 5] \quad D_g \Rightarrow 2x+2 \geq 0 \quad x \geq -1 \Rightarrow (-\infty, 5] = D_f \cap D_g$$

(۱۰)

$$m=5 \rightarrow f(x) = \sqrt{5-x} + n \quad f(2) - g(2) = 9\sqrt{2}$$

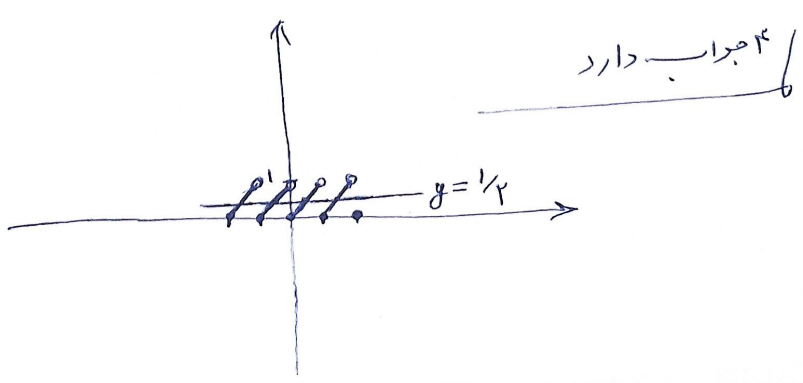
$$\sqrt{5-2} + n - \sqrt{2} = 9\sqrt{2} \quad 2+n - 2\sqrt{2} = 9\sqrt{2} \quad n = 11\sqrt{2} - 2$$

(۱۱)

$$m+n = 5 + 11\sqrt{2} - 2 = 3 + 11\sqrt{2}$$

$$x - [x] = 1/2$$

(۱۲)



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