

$$P(x) = x^5 + 2x + 1 + 9x^2 - 6x + 1 + mx^2 + nx + mn$$

$$\Rightarrow P(x) = (10+m)x^2 + (n-6)x + 2+mn \xrightarrow[\text{ناب}]{P(x)}$$

$$n=6 \xrightarrow{\text{ناب}} P+1=m \Rightarrow P+1=-10 \Rightarrow P=-11 \Rightarrow P+2=-9 \Rightarrow P+K=-1$$

$$\Rightarrow K=10 \Rightarrow m+P+n+K=-10-11+6+10=-7$$

$x-2$	-	-	+	+
x^2-2x-1	+	-	-	+
$x-2$				
x^2-2x-1	-	+	-	+

$\Rightarrow D_f = (-2, 2] \cup (3, +\infty)$

$4-2[-x] \neq 0$

$\Rightarrow 2[-x] \neq 4 \Rightarrow [-x] \neq 2$

$\Rightarrow -x \notin [2, 3) \Rightarrow x \notin (-3, -2]$

$\Rightarrow D_f = \mathbb{R} - [-3, -2]$

$|x-2|-x^2 > 0 \Rightarrow |x-2| > x^2$

$\Rightarrow x \in [-2, 1] \quad (1)$

$|x|-1 \neq 0$

$\Rightarrow x \neq \pm 1 \quad (2)$

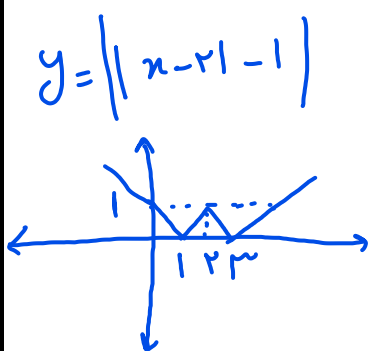
$\Rightarrow x \in [-2, 1) - \{-1\}$

$\sqrt{|x|+x} > 0$

$\Rightarrow x > 0 \quad (3)$

$x(x^2-1) > 0 \Rightarrow x \in [-1, 0] \cup [1, +\infty) \quad (4)$

$(1), (3) \Rightarrow x \in [1, +\infty)$



یعنی منجر به ازای دقیقاً ۳ مقدار صحیح صفری شد

یعنی $|x-2|-1=K$ ۳ جواب دارد

با توجه به نمودار تنها خط $y=1$ این شکل را دقیقاً ۳ نقطه قطع می‌کند بنابراین $K=1$ می‌باشد

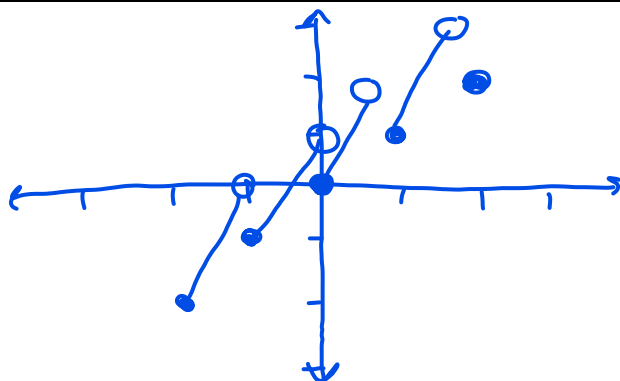
$-2 \leq x < -1 \rightarrow y = 2x+2$

$-1 \leq x < 0 \rightarrow y = 2x+1$

$0 \leq x < 1 \rightarrow y = 2x$

$1 \leq x < 2 \rightarrow y = 2x-1$

$x=2 \rightarrow y = 2x-2$



$$f(n) = \frac{(n-r)(n-1)}{n+a} + b \quad \text{وحي} \Rightarrow n+a = n-r, b=1$$

$$\Rightarrow a-b = -r$$

$$\underline{b} \quad n+a = n-1, b = -r$$

$$\Rightarrow a-b = r$$

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$$f(n) = \frac{n^r + rn^r - n - r}{n^r - 1}; n \neq \pm 1 \Rightarrow f(n) = \frac{(n+r)(n+1)(n-1)}{(n+1)(n-1)}; n \neq \pm 1$$

$$\xrightarrow{n \neq \pm 1} f(n) = n+r \xrightarrow{f=g} C=r$$

$$\left. \begin{aligned} g(1) = r = f(1) &= \frac{a+r}{1+b} \\ g(-1) = 1 = f(-1) &= \frac{-a+r}{-1+b} \end{aligned} \right\} \Rightarrow b = \frac{1}{r}, a = \frac{0}{r}$$

$$\Rightarrow b+C = \frac{0}{r}$$

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$$r f - g(1) = r \sqrt{1-ra} + rK - r - \sqrt{b-r} - rK$$

$$= r \sqrt{1-ra} - \sqrt{b-r} - K - r = K$$

$$\Rightarrow r \sqrt{1-ra} - \sqrt{b-r} - r = K$$

$$\text{جواب نهیست} \Rightarrow K = -r, a = \frac{1}{r}, b = r \Rightarrow ra - \frac{b}{r} - K = 1 - r + r = 1$$

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$$Dg = [-1, +\infty)$$

$$Df \times g = [-1, v] \Rightarrow Df \cap Dg = [-1, v] \Rightarrow Df = (-\infty, v]$$

$$\Rightarrow m = v$$

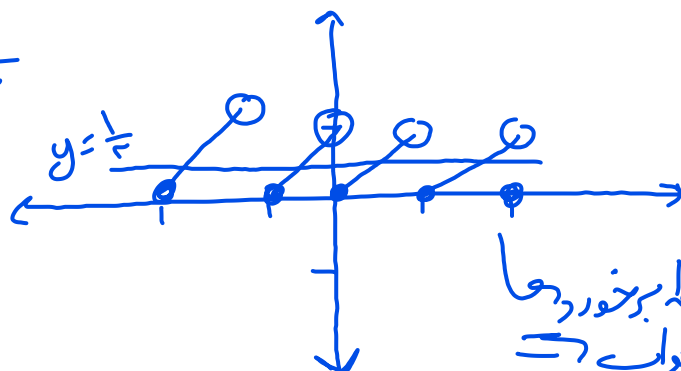
$$f-g(r) = \sqrt{r} + n + \sqrt{1} = 4\sqrt{r} \Rightarrow n = 4\sqrt{r} - r$$

$$\Rightarrow m+n = 4\sqrt{r} + 1$$

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$$y = (-1)^r (n - [n]) = \frac{1}{r}$$

$$\Rightarrow n - [n] = \frac{1}{r}$$



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