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$$f(x) = (x+1)^2 + (x-1)^2 + mx^2 + nx + mn = x^2 + 2x + 1 + x^2 - 2x + 1 + mx^2 + nx + mn$$

$$(10+m)x^2 + (n-2)x + 2+mn = f(x) \sim \text{تساوی است}$$

$$\begin{cases} 10+m=0 \\ n-2=0 \end{cases} \Rightarrow \begin{cases} m=-10 \\ n=2 \end{cases}$$

$$f(x) = -10x^2 + 2x + 2$$

$$x=-9 \rightarrow \dots \rightarrow P+K = -18$$

$$m+n+P+K = -18+2 = -16$$

$$a) y = \sqrt{\frac{x-2}{x^2-2x-1}}$$

$$x^2 = t \Rightarrow y = \sqrt{\frac{t-2}{(t-2)(t+1)}}$$

$$ID = (-2, -\sqrt{2}) \cup (\sqrt{2}, +\infty)$$

$$b) \frac{2x^2+1}{x(x-[-x])} = \frac{2x^2+1}{x(x+[-x])}$$

$$x \neq [-x] \Rightarrow x \neq -x \Rightarrow x \neq 0$$

$$ID = \mathbb{R} - \{0\}$$

$$a) \frac{\sqrt{x(x^2-1)}}{\sqrt{|x|+x}}$$

$$|x| = -x \Rightarrow x \leq 0$$

$$b) \frac{\sqrt{|x-2|-x^2}}{|x|-1}$$

$$|x| \neq 1 \Rightarrow x \neq \pm 1$$

$$|x-2|-x^2 \geq 0 \Rightarrow x \leq 2$$

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

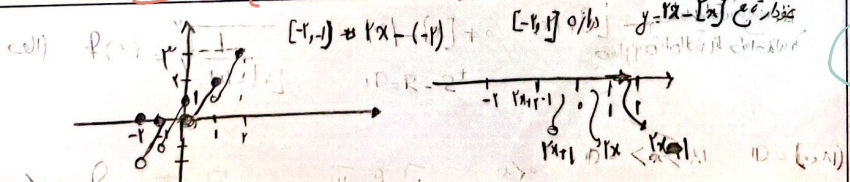
$$||x-2|-1| - k \neq 0$$

$$|x-2|-1 \neq k$$

$$|x-2|-1 \neq -k$$

$$x \neq 3+k, x \neq 1+k, x \neq 1-k, x \neq 3-k, x \neq 1+k, x \neq -1+k$$

$$k=1, k=-1$$



$$y = \frac{x^r - rx + r}{x+a} + b$$

$$y = x \leftarrow \text{check}$$

$$b \rightarrow -x$$

$$\frac{(x-1)(x-r)}{x+a} + b$$

$$a = -1 \rightarrow x - r + b = x \quad \boxed{b = r}$$

$$a \cdot b = -r$$

$$a = -r \rightarrow x - 1 + b = x \quad \boxed{b = 1}$$

$$a \cdot b = \text{check} \quad -r \cdot 1 = -r$$

$$\frac{x^r + rx^r - x - r}{x^r - 1} = \frac{x^r(x+r) - 1(x+r)}{x^r - 1} = \frac{(x^r - 1)(x+r)}{x^r - 1} = x+r \quad \boxed{C = r}$$

$$x = 1 \rightarrow y = r$$

$$x = -1 \rightarrow y = 1$$

$$\frac{a+r}{b+1} = r \quad a+r = cb+r$$

$$\frac{-a+r}{-1+b} = 1 \quad r = \frac{-a+r}{-1+b} \quad \boxed{b = \frac{1}{r}}$$

$$r \cdot y = \{(b, k)\}$$

$$r\sqrt{x-ra} + rk - r - \sqrt{b-fx} - rk = k$$

$$r\sqrt{f-ra} + rk - r - \sqrt{b-f} - rk = k \quad \boxed{a = \frac{f}{r}} \quad \boxed{b = f} \quad \boxed{k = -r}$$

$$ra + \frac{b}{r} - k = f - r + r(f) \quad \text{check}$$

$$rk - r - rk = -r \quad k = -r$$

$$\underbrace{f-g(r)}_{\sqrt{f}} = \sqrt{m-r} + n - \underbrace{\sqrt{r(r)+r}}_{\sqrt{r}}$$

$$\frac{1}{\sqrt{r}}$$

$$n = 0$$

$$m = 1/r$$

$$m+n = 1/r$$

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

$$\{x - [x]\} = \frac{1}{r}$$

$$\text{check}$$

