

$$f(x) = x^2 + 2x + 1 + 9x^2 - 4x + 1 + mx^2 + nx + mn$$

$$= (1 + 9 + m)x^2 + (2 + n - 4)x + \dots$$

$$g(x) = \{(\xi, -10), (\xi, p+1), (-11, 1), (-9, -11+k)\}$$

1. معادلات زیر را حل کنید: $x^2 = 0$ و $x^2 = 1$

$10 + m = 0 \Rightarrow m = -10$ $-4 + n = 0 \Rightarrow n = 4$

$p + 1 = -10 \Rightarrow p = -11$ $-11 + k = -1 \Rightarrow k = 10$

$m + n + p + k = -10 + 4 - 11 + 10 = -7$

الف) $y = \sqrt{\frac{x-2}{(x^2-4)(x^2+1)}} = \sqrt{\frac{(x-2)}{(x-2)(x+2)(x^2+1)}}$

$I: x \neq 2$

$II: (-2, +\infty)$

$D_f = I \cap II: (-2, +\infty) - \{2\}$

ب) $\xi - 2[-x] = 0 \Rightarrow \xi = 2[-x] \Rightarrow \xi = [-x]$

$D_f: [-2, 3)$

الف) $x(x-1)(x+1) > 0$

$\frac{-1}{-1} + \frac{0}{0} + \frac{1}{1} = 0$

$I: [-1, 0] \cup [1, +\infty)$

$|x| + x > 0 \Rightarrow x > 0$

$f(x): I \cap II: [1, +\infty)$

ب) $|x-2| - x^2 > 0$

$\begin{cases} x > 2 \rightarrow x-2-x^2 > 0 \\ x < 2 \rightarrow 2-x-x^2 > 0 \end{cases}$

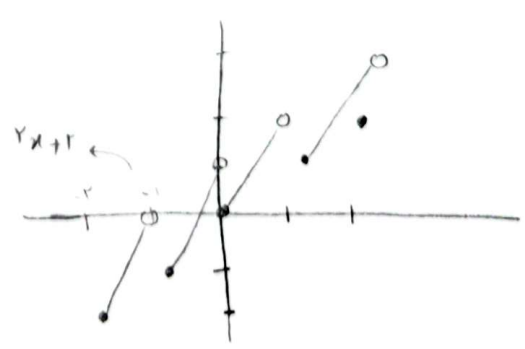
$x = \frac{-1 \pm \sqrt{1-4(-1)(-2)}}{2(-1)} = \frac{-1 \pm \sqrt{1-8}}{-2}$

$x = \frac{1 \pm \sqrt{1-4(-1)(-2)}}{2(-1)} = \frac{1 \pm \sqrt{1-8}}{-2}$

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

$D_f: I \cap II: [-2, 1) - \{-1\}$

$2x - [x] \in [-2, 2]$



$$f(x) \rightarrow x=0$$

$$x=1$$

$$\frac{x}{a} + b = 0 \Rightarrow \frac{x}{a} = -b \Rightarrow ab = -x$$

$$\hookrightarrow a = -x$$

$$a-b = -x-1 = -x-1$$

-4

$$\frac{1-\frac{x}{a}+x}{1+a} + b = 1 \Rightarrow b = 1$$