

$$f(x) \Rightarrow x^2 + x + 1 + 9x^2 + 1 - 9x + mx^2 + hx + mh \Rightarrow m = -10$$

$$f(x) \Rightarrow 1 + (-10) = -9 \Rightarrow g(x) \Rightarrow \begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 1 \\ 0 \\ -1 \end{pmatrix} \Rightarrow \begin{pmatrix} 1 \\ 0 \\ -1 \end{pmatrix} \cdot \begin{pmatrix} 1 \\ 0 \\ -1 \end{pmatrix} = 1 + 0 + 1 = 2$$

$$(-96p + k) \Rightarrow k = 10 \Rightarrow m + h + p + k \Rightarrow -10 + 5 - 11 + 10 = -6$$

الف) $\sqrt{\frac{x-1}{x^2+2x-1}}$ $\Rightarrow x^2+2x-1 = 0 \Rightarrow x = -1 \pm \sqrt{2}$ $\Rightarrow x \in (-1-\sqrt{2}, -1+\sqrt{2})$

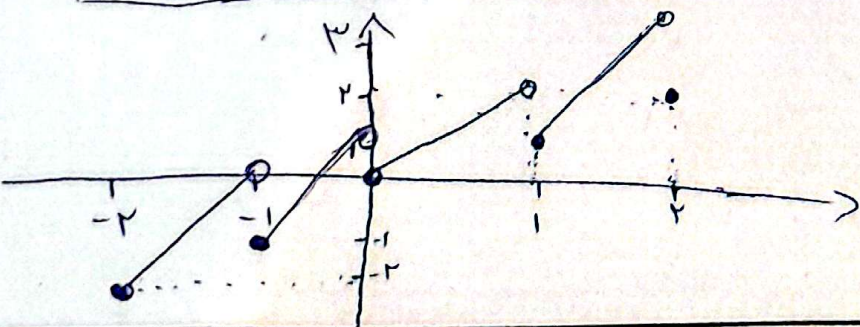
ب) $\frac{1}{x^2+2x-1} \Rightarrow x^2+2x-1 \neq 0 \Rightarrow x \in (-1-\sqrt{2}, -1+\sqrt{2})$

الف) $f(x) = \frac{\sqrt{x(x^2-1)}}{\sqrt{x^2+2x-1}}$ $\Rightarrow x(x^2-1) \geq 0 \Rightarrow x \in (-1, 0] \cup [1, +\infty)$

ب) $\frac{\sqrt{|x-1|-x^2}}{|x|-1} \Rightarrow |x-1|-x^2 \geq 0 \Rightarrow x \in [-1, 1]$

$x \geq 3 \Rightarrow x-3-k=0 \Rightarrow x=3+k \Rightarrow k \in [0, +\infty)$ $3 > x \geq 2 \Rightarrow -x+3+k=0 \Rightarrow x+k=3$

$x \in (-1, 0] \cup [1, +\infty)$ $x \in [-1, 1]$ $x \in [2, 3]$ $x \in [3, +\infty)$



$$\frac{x^2 - 5x + 1}{x + a} + b = \begin{cases} \text{if } x + a = x - 1 \Rightarrow a = -1 \Rightarrow 2x - 5 + b = 2x \Rightarrow b = 5 & (1) \\ \text{if } x + a = x - 3 \Rightarrow a = -3 \Rightarrow x - 4 + b = 2x \Rightarrow b = 1 & (2) \end{cases}$$

$$(1) \Rightarrow \frac{a-b}{x} = \frac{-1-5}{x} = \frac{-6}{x} \Rightarrow a-b = \frac{-6}{x} \Rightarrow -1-5 = -6 \Rightarrow -6 = -6 \Rightarrow$$

$$(-6) + (-6) = -12$$

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

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

$$-1+b = -a+1 \Rightarrow b = -a+1 \Rightarrow 1(-a+1) = -a+1 \Rightarrow -a+1 = -a+1 \Rightarrow a = 1, b = 1$$

$$b = -1+1 = 0 \Rightarrow b = 0, a = 1$$

$$g(x) = \sqrt{b-x+1} \Rightarrow b = 1, a = 1$$

$$1-x-1 = -x \Rightarrow -x = -x \Rightarrow x = 1 \Rightarrow a = 1, b = 1$$

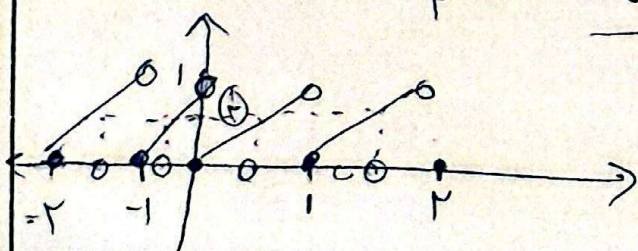
$$1-a-b-x = 1-1-1-x = -1-x = -1 \Rightarrow x = 0$$

$$g(x) = \sqrt{1-x} = f(x) \in [-1, 0] / D_f \cap D_g = [-1, 0] / D_f \in (-\infty, 0] \Rightarrow m = 0$$

$$x = 1 \Rightarrow \sqrt{1-x} = 0 \Rightarrow 1-x = 0 \Rightarrow x = 1 \Rightarrow 1-x = 0 \Rightarrow x = 1$$

$$m+n = 1+1 = 2 \Rightarrow \sqrt{1-x} = 1 \Rightarrow 1-x = 1 \Rightarrow x = 0$$

$$y = (-1)^x (x - [x]) = \frac{1}{x} \Rightarrow x - [x] = \frac{1}{x} \Rightarrow x = \frac{1}{x} \Rightarrow x^2 = 1 \Rightarrow x = \pm 1$$



$$\frac{1}{x} = \frac{1}{x}$$