

$$f(n) = n^2 + 7n + 1 + 9n^2 - 7n + 1 + mn^2 + n + mn$$

$1 \cdot n^2 \rightarrow m \geq 0$ $n = +\infty$

$$g(x) = m = p+1 \rightarrow p+1 \geq 0 \rightarrow p \geq -1$$

$$g(-9) = -1, p+K$$

$-p+K = -1 \rightarrow K = 0$

$n+m+p+K = -1$

ج) $\frac{x-y}{(x^2-4)(x^2+x)} \rightarrow \frac{-y}{-x} + \frac{y}{x} +$

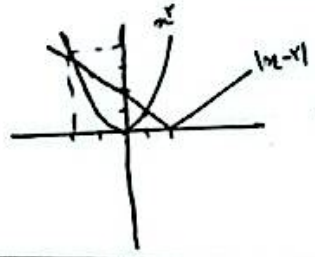
$\mathcal{D}_f = (-\infty, +\infty) - \{x\}$

ب) $x-y[-x] \neq 0 \rightarrow [-x] \neq y \rightarrow x < -x < y \rightarrow -x < x \leq y \rightarrow \mathbb{R} - [-x, y]$

الف) $f(x) = \frac{\sqrt{x(x-1)}}{\sqrt{|x|+x}}$ $x(x-1)(x+1) \rightarrow \frac{-1}{x} + \frac{1}{x} +$

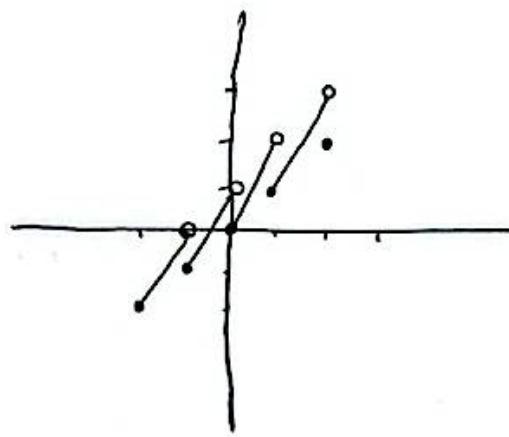
$\mathcal{D}_f = [1, +\infty)$

ب) $f(x) = \frac{\sqrt{|x-y| - x^2}}{x \neq \pm 1}$ $|x-y| \geq x^2 \rightarrow$



$\rightarrow [-x, 1] \rightarrow \mathcal{D}_f = [-x, 1)$

x_{n-1}	$1 \leq x < 2$
x_n	$0 < x < 1$
x_{n+1}	$-1 < x < 0$
x_{n+2}	$-2 < x < -1$



$$f(x) = x \cdot \frac{x^2 - 1}{x+1} + b = \frac{(x-1)(x+1)}{x+1} + b \rightarrow \begin{cases} a=1 \rightarrow b=1 \rightarrow a-b=0 \\ a=-1 \rightarrow b=1 \rightarrow a-b=-2 \end{cases} \quad -4$$

$$f(x) = \begin{cases} \frac{x^2 + 1}{x-1} \cdot \frac{x(x-1) + 1(x-1)}{x-1} = \frac{(x^2+1)(x)}{x-1} = \frac{x^3+x}{x-1} = g(x) = x+c \rightarrow \boxed{c=1} \\ \frac{a+x}{x+b} \xrightarrow{x \rightarrow -1} \frac{a-1}{b-1} \xrightarrow{x \rightarrow 1} \frac{a+1}{b+1} \rightarrow \frac{a-1}{b-1} = \frac{a+1}{b+1} \rightarrow \begin{cases} b+c = \frac{a}{r} \\ \frac{r-a}{b-1} = 1 \rightarrow b-1 = r-a \rightarrow r = r+b-1 \rightarrow \boxed{b = \frac{1}{r}} \\ \boxed{a = \frac{0}{r}} \end{cases} \end{cases} \quad -5$$

$$\begin{aligned} f(x) &= \sqrt{x-1} \rightarrow x \geq 1 \\ g(x) &= \sqrt{x-1} + 1 \rightarrow x \geq 1 \\ f(x) &= \sqrt{x-1} \rightarrow x \geq 1 \\ g(x) &= \sqrt{x-1} + 1 \rightarrow x \geq 1 \end{aligned} \quad -1$$

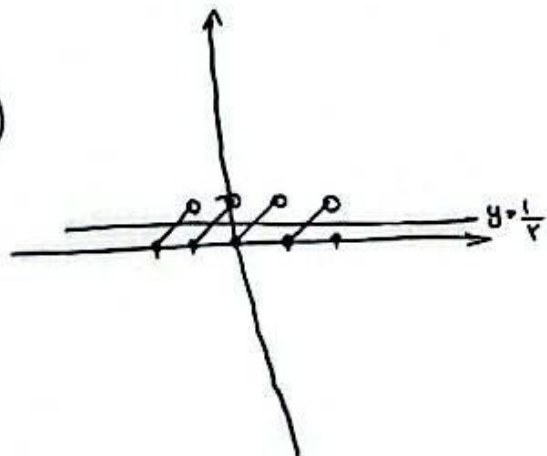
$$f(x) = \sqrt{x-1} \rightarrow x \geq 1 \quad -4$$

$$f(x) = \sqrt{x-1} \rightarrow x \geq 1 \rightarrow \boxed{f(x) = [1, \infty)} \rightarrow \boxed{m=1}$$

$$f(x) = x+1 \rightarrow f-g(x) = x+1 - \frac{x}{\sqrt{x-1}} = \frac{x(\sqrt{x-1} + 1) - x}{\sqrt{x-1}} = \frac{x\sqrt{x-1} + x - x}{\sqrt{x-1}} = \frac{x\sqrt{x-1}}{\sqrt{x-1}} = x \rightarrow \boxed{m=1}$$

$$y = \frac{1}{x-1} \rightarrow y = \frac{1}{x-1} \rightarrow y = \frac{1}{x-1} \rightarrow y = \frac{1}{x-1} \quad -10$$

نقاط خروج = نقاط جاب



نقاط خروج