

$$\text{الف) } D_{f_2} R \cdot \left\{1, \frac{\omega}{r}\right\} \rightarrow \frac{F_n^r - P_n^r + P_1 n - 1\omega}{0} \frac{1n-1}{F_n^r + 1q + 1\omega} \sim (P_n - F)^r - 1$$

$$b) Df_2 R = \left\{ -1, r, -\frac{r}{r} \right\} \quad \frac{r_n^r - r^r - r n - \varepsilon \frac{n+1}{r_n^r - r n - \varepsilon}}{0} \quad \frac{r_n^r - 1 r_n - 1 r}{r(r_n + r)(n - r)} = 0 \quad \frac{x_2 r}{x_2 - \frac{r}{r}}$$

الف) $x - \sqrt{r-rx} \neq 0 \rightarrow \sqrt{r-rx} \neq x \rightarrow r-rx \neq x^2 \rightarrow r \neq x^2 + rx \rightarrow x(x+r) \neq r$

$\begin{array}{c} -r \quad 0 \quad r \\ + \mid - \mid - \mid - \mid + \end{array} \quad P_f = (r, +\infty) \cup (-\infty, -r)$

$\begin{array}{c} 1 \quad r \\ - \mid + \mid - \end{array} \quad r$

$$b) \quad n - \sqrt{r_{n-r}} \neq 0 \rightarrow \sqrt{r_{n-r}} \neq n \rightarrow r_{n-r} \neq n^2 \rightarrow r_{n-r} \neq r \rightarrow n(r-n) \neq r$$

الف) $\frac{x^{r-1} + x^r}{x^r - 1} \stackrel{!}{=} 0$ $\frac{(x-1)(x-1)}{(x-1)(x-1)} \rightarrow \frac{1}{1} = 1$ $\rightarrow \text{df} = [5 + \infty)$

$\frac{1}{2} \text{ of } R$

الف) $x^2 - 2x > 0 \rightarrow x(x-2) > 0$

0	2
+	-
+	+

$(2, +\infty) \cup (-\infty, 0)$

$$\bigcup_{\rho \in \mathbb{R}} \{x - \rho^r y_0 \rightarrow x - \rho^r = -\varepsilon < x < \varepsilon\} \quad , \quad |x| - \rho > 0 \rightarrow |x| - \rho = \begin{cases} x > \rho \\ x < -\rho \end{cases} \quad |x| - \rho \neq 1 \rightarrow \begin{cases} |x| \neq \rho \\ x \neq \pm \rho \end{cases}$$

c) $\frac{x^2 - 10x + 12}{x - 2} \rightarrow x > 2, \quad 10 - x > 0 \rightarrow x < 10, \quad 10 - x \neq 1 \rightarrow x \neq 9 \rightarrow D_f = (2, 10) - \{9\}$

$$\Rightarrow x^{r-1}u + r \geq 0 \rightarrow (r-1)(r-u) \geq 0, r \geq x^r \geq 0, r \geq 0, \pi^r(-\infty, \infty) \cup [v, +\infty) \cup [0, r) - \{1\}$$

$$\frac{n(n-1)}{n(n+1)} \quad \text{①}$$

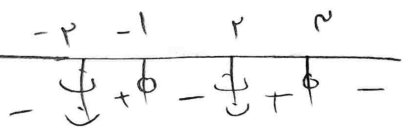
$$\frac{-1}{+} \frac{0}{-} \frac{1}{-} \frac{1}{+} \quad \text{Df: } [1, +\infty) \cup (-\infty, -1)$$

$\begin{array}{c|cccc} & -1 & 0 & 1 & \\ \hline x^r - m & \text{shaded} & + & - & + \\ \hline x + m & + & + & + & \text{shaded} \\ \hline p(x) & + & - & - & + \end{array}$

$$\frac{n-f(n)}{n} \geq 0$$

$$n-f(n) \geq 0 \rightarrow f(n) \leq n \rightarrow n \in -1, 2$$

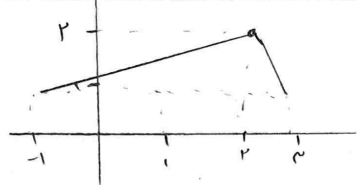
$$f(n) \neq 0 \rightarrow n \in 2, -2$$



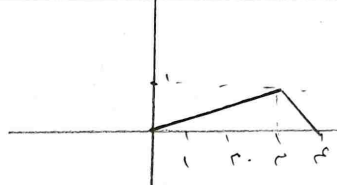
$$Df = (-2, -1] \cup (2, 2]$$

6

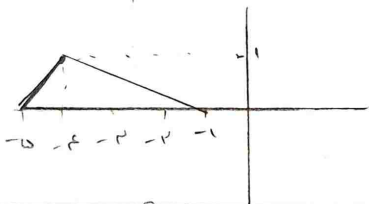
الف)



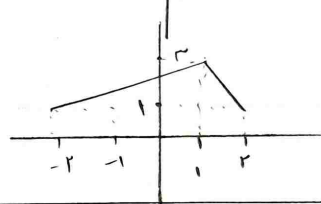
ب)



ج)



د)



7

$$f(x) = x^2 - 2x \geq 0 \rightarrow x(x-2) \geq 0$$

$$Df = [2, +\infty) \cup [-2, 0]$$

$$g(x) = x \geq 0, x^2 - 2 \geq 0 \rightarrow x^2 \geq 2 \rightarrow x \geq \sqrt{2}, x \leq -\sqrt{2} \quad Dg = [\sqrt{2}, +\infty) \cup (-\infty, -\sqrt{2}]$$

$$f(x) \neq g(x)$$

$$f(x) = x \geq 0, \sqrt{x} \in [\sqrt{x}] \quad Df = [0, +\infty)$$

$$g(x) = x - |x| \geq 0 \rightarrow |x| \leq x \quad \begin{cases} |x| = x \checkmark \rightarrow Dg = [0, +\infty) \\ |x| < x \text{ غير محقق} \end{cases}$$

$$f(x) = g(x)$$

9

الف) $x/|x| \geq 0 \rightarrow Df = [0, +\infty), g(x) = x \rightarrow Dg = \mathbb{R} \quad f(x) \neq g(x)$

ب) $f(x) = |x| \neq 0 \rightarrow Df = \mathbb{R} - \{0\}, g(x) = x \neq 0 \rightarrow Dg = \mathbb{R} - \{0\}$

$$f(x) = g(x)$$

10