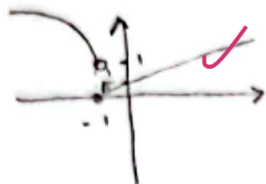


نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۲... کلاس ده/دوازدهم... سیم

$$x = \begin{cases} y-1 & y \geq 0 \\ -y^2 & y > 1 \end{cases} \quad y-1=x \quad y = \frac{x+1}{y} \quad y \geq \frac{x+1}{y} \quad x \geq -1$$

$$-y^2=x \quad y = \pm \sqrt{-x} \quad y \geq 1 \quad x < -1$$



هیچ خطی عمودی ندارد، اما دو بار قطع نمی‌کند. تابع است.

$$f(x) = 0 \quad x = -1, 0, 1 \quad f(x-2) = 0 \quad x = -2, 0, 2$$

$$x \neq -1 \quad x \neq 0$$

$$D_g = (-2, -1] \cup [0, 1) \cup [2, +\infty)$$

$$\text{الف)} \quad x^3 - 4x = 0 \quad x(x-2)(x+2) = 0 \quad x = -2, 0, 2 \quad D_f = \mathbb{R} - \{-2, 0, 2\}$$

$$\text{ب)} \quad \frac{2x^2 - 4x + 2}{x^3 - 4x} > 0 \quad \frac{2x^2 - 4x + 2}{x(x-2)(x+2)} > 0 \quad \frac{-2}{-2+2-2}$$

$$D_{\frac{1}{f}} = (-2, 0) \cup (2, +\infty)$$

$$\text{الف)} \quad y = \sqrt{\frac{x-2}{x^2-2x^2-x}} \quad \frac{x-2}{x^2-2x^2-x} > 0 \quad \frac{x-2}{(x^2-2)(x^2+2)} > 0$$

$$\frac{x-2}{(x-2)(x+2)(x^2+2)} > 0 \quad \frac{-2}{-2+2+2} \quad D_f = (-2, 2) \cup (2, +\infty)$$

$$\text{ب)} \quad x-2 \in [-2, 0] = 0 \quad [-2, 0] = 2 \quad x = (-2, 2] \quad D_f = \mathbb{R} - (-2, 2]$$

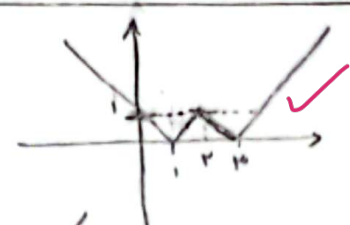
$$\text{الف)} \quad |x+1| > 0 \quad |x| > -x \quad \Rightarrow x > 0$$

$$x(x-1)(x+1) > 0 \quad \frac{-1}{-1+1-1} = -1 \leq x \leq 0 \quad x > 1 \quad D_f = [1, +\infty)$$

$$\text{ب)} \quad |x|-1=0 \quad |x|=1 \quad x=1 \quad |x-2| > x^2 \quad x^2 \leq |x-2|$$

$$x \geq 2 \quad x^2 \leq x-2 \quad x^2 - x + 2 \leq 0 \quad \Delta < 0 \quad x \leq 2 \quad x^2 \leq -x+2 \quad x^2 + x - 2 \leq 0 \quad (x+2)(x-1) \leq 0 \quad \frac{-2}{-2-1}$$

$$D_f = [-2, 1] \cup (1, 2]$$

الف) $y = \sqrt{x(x-2)} [x-2]$ $\frac{x}{y} + \frac{1}{x} = \frac{1}{x-2}$ $D = \mathbb{R} \checkmark$ ب) $y = \sqrt{ x-1 } [x-2]$ $\frac{x}{y} + \frac{1}{x} = \frac{1}{x-2}$ $D = [3, +\infty) \cup \{1\} \checkmark$	2 6
$x-2 - 1 - k = 0 \quad k = x-2 - 1$  مقدار تنها $y=1$ است، قطع می کند $\leftarrow k=1 \checkmark$	7 7
$x^2 - 4x + 2 = 0 \quad (x-2)(x+1) = 0 \quad x = -2 \quad x = -1$ $x - 1 = 0 \quad x = 1 \quad \frac{x+1}{x-1} = 0 \quad x = -1$ $D_f' = \{-2, -1, 1\} \quad n(D_f') = 3 \Rightarrow n = 2 \quad x^2 - 4x + 2 = 0 \quad x = 2 \pm \sqrt{2}$ $x^2 - 4x + 2 = 0 \quad (x-2)^2 = 0 \quad x = 2 \checkmark \rightarrow$ 1	8 8
$y = \log \log \frac{1}{x}$ $\log \frac{1}{x} > 0 \checkmark \quad -\log x > 0 \quad \log x < 0$ $\frac{1}{\log x} < 0 \quad \log x > 0 \quad \cancel{x > 1}$ $D_f = (1, +\infty) \checkmark$	9 9
$-\omega \leq x \leq \omega$ $x \leq 2\omega$ $2x \leq 4\omega$ $4x - 1 \leq 4\omega$ $D_{f(m,1)} = (-\infty, \omega] \checkmark$	10 10

$$1) \quad n+1 > 0 \rightarrow n > -1, \quad n+1 \neq 1 \rightarrow n \neq 0$$

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$$2) \quad n > 0, \quad n \neq 1$$

$$\xrightarrow{n} D_f = (0, 1)$$

$$3) \quad \lg \frac{1}{n} > 0 \rightarrow 0 < n < 1$$

10- دقتی معلوم دامنه $f(n)$ یعنی معادری که تابع f می‌تونه بگیره پس $1 - \sqrt{3} \leq n \leq 3$ باید در بازه $[-5, 3]$ قرار بگیرد:

$$-5 \leq 1 - \sqrt{3} \leq 3 \rightarrow -4 \leq \sqrt{3} \leq 4 \rightarrow \sqrt{3} \leq 4 \rightarrow -\frac{4}{\sqrt{3}} \leq n \leq \frac{4}{\sqrt{3}}$$

$$\rightarrow -\frac{4\sqrt{3}}{3} \leq n \leq \frac{4\sqrt{3}}{3} \rightarrow D_{f(1-\sqrt{3})} = \left[-\frac{4\sqrt{3}}{3}, \frac{4\sqrt{3}}{3} \right]$$