

• $y^3 - n = 2n^2$ $\xrightarrow{\text{تعیین ضابطه}} \begin{cases} y_1^3 = 2n^2 + n \\ y_2^3 = 2n^2 + n \end{cases} \rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2 \rightarrow \text{تابع صحیح}$

(۱)

• $|y| + n^2 = n \cdot 1^3 \xrightarrow{n=1} |y| + 1 = 1 + 1 \rightarrow |y| = 1 \rightarrow y = \pm 1 \rightarrow \text{تابع صحیح} \times$

• $\frac{\sqrt{n-4}}{\text{همواره نامنتی}} + \frac{|y-2|}{\text{همواره نامنتی}} = 0 \rightarrow \text{هر دو مشترک} \rightarrow \sqrt{n-4} = 0 \rightarrow n=4 \rightarrow \text{تابع صحیح} \checkmark$
 $|y-2| = 0 \rightarrow y=2$

• $n = \cos y \xrightarrow{n=\frac{1}{2}} \frac{1}{2} = \cos y \rightarrow y = \pm \frac{\pi}{3} \rightarrow \text{تابع صحیح} \times$

الف) $y = \frac{n+4}{n^2-4n} \rightarrow n^2-4n \neq 0 \rightarrow n(n-4) \neq 0 \rightarrow n \neq 0, n \neq 4 \rightarrow D_f = \mathbb{R} - \{0, 4\}$

(۲)

ب) $y = \frac{n+4}{n^2-7n+12} \rightarrow \Delta = b^2 - 4ac = 49 - 48 = 1 \rightarrow \text{دو ریشه} \rightarrow D_f = \mathbb{R}$

ج) $y = \frac{n+4}{n^2+n+4} \rightarrow \Delta = b^2 - 4ac = 1 - 16 = -15 \rightarrow \text{دو ریشه} \rightarrow D_f = \mathbb{R}$

د) $y = \frac{n+4}{n^2-4n^2} = \frac{n+4}{(n+2n)(n-2n)} = \frac{n+4}{n(n-2)} \rightarrow D_f = \mathbb{R} - \{0, 2\}$

الف) $y = \sqrt{4-n} + \sqrt{n-2} \rightarrow 4-n \geq 0 \rightarrow n \leq 4$
 $n-2 \geq 0 \rightarrow n \geq 2 \rightarrow 2 \leq n \leq 4 \rightarrow [2, 4]$

(۳)

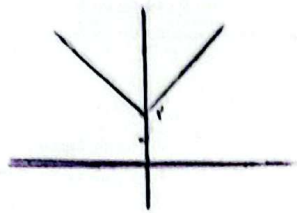
ب) $y = \frac{2n+1}{n^2+1} \rightarrow n^2+1 \neq 0 \rightarrow n^2 \neq -1 \rightarrow D_f = \mathbb{R}$

ج) $y = \frac{\sqrt{n-2}}{n-4} \rightarrow n-2 \geq 0 \rightarrow n \geq 2$
 $n-4 \neq 0 \rightarrow n \neq 4 \rightarrow D_f = [2, +\infty) - \{4\}$

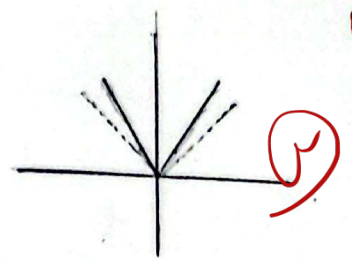
د) $y = \frac{2n+3}{|n|+n^2} \rightarrow D_f = \mathbb{R} - \{0\}$

همواره نامنتی
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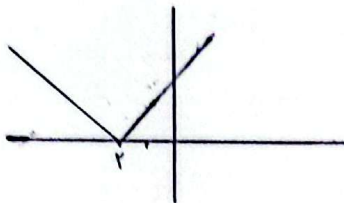
الف) $y = |x| + 2$



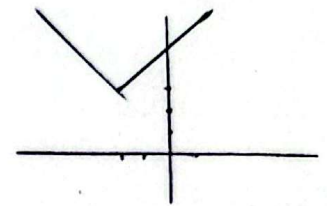
ب) $y = 2|x|$



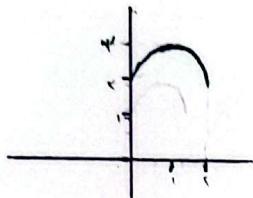
ج) $y = |x+2|$



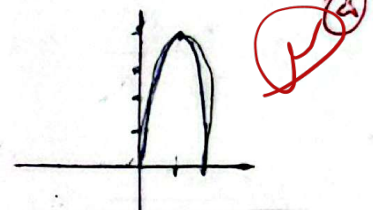
د) $|x+2| + 2$



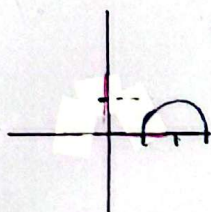
الف) $f(x) + 2$



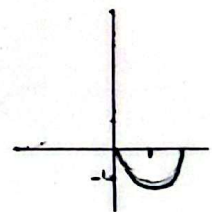
ب) $f(x)$



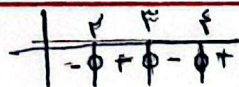
ج) $f(x-1)$



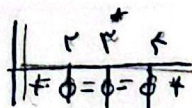
د) $-f(x)$



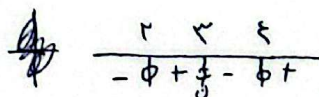
الف) $y = (x-2)(x-3)(x-4)$



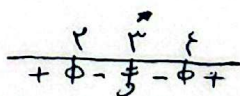
ب) $y = (x-2)(x-3)^2(x-4)$



الف) $y = \frac{(x-2)(x-4)}{x-3}$



ب) $y = \frac{(x-2)(x-4)}{(x-3)^2}$



$\begin{pmatrix} + & - & - & + \\ \vdots & \vdots & \vdots & \vdots \\ 0 & + & - & + \end{pmatrix}$

$(1-x)(1-x^2)(1-x^4)(1-x^8) \dots$

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$\rightarrow$ $\frac{1}{2} \log \frac{1}{2}$

$$\begin{array}{r} 1 \\ -1 \\ \hline 0 \\ -1 \\ \hline 1 \\ -1 \\ \hline 0 \\ -1 \\ \hline 1 \end{array}$$

$$\rightarrow (-\infty, -1) \cup (0, +\infty) - \{1\}$$

$$(1 - \alpha)w = w - \alpha$$

$$(n+1)(n-1)$$

9.

$$y = \sqrt{\frac{n^2 - 1}{n^2 - n + 1}} = \frac{(n + \epsilon)(n - \epsilon)}{\cancel{(n + \epsilon)}(n - \epsilon)(n - 1)}$$

$$\frac{-\frac{\epsilon}{2} - 1}{-\frac{\epsilon}{2} - 1 + \frac{\epsilon}{2}} \cup (-\infty, -\frac{\epsilon}{2}] \cup (1, +\infty) - \{1\}$$