

نام و نام خانوادگی الینا عبدی
پاسخنامه تشریحی تکلیف شماره ... A ... کلاس ... 12 / 1 / 1398 ... B

$$y = |x| + 1 \Rightarrow |x| = \frac{y-1}{y+1}$$

$$\frac{-\frac{1}{r}}{+\frac{1}{q} - \frac{1}{r} +} \rightarrow R_f = (-\infty, -\frac{1}{r}] \cup (1, +\infty)$$

$$\therefore y = \frac{x^{p+1}}{|n|} = \frac{|n|^{p+1}}{|n|} = |n|^p + \frac{1}{|n|}$$

$a + \frac{1}{a} \geq 2$ ← صواب است و اگر a عدد حقیقی باشد

$$R_f = [\gamma, +\infty)$$

$$y = \frac{n^r + r_n - r}{n + r} \rightarrow y_n + {}^r y = \frac{n^r + r_n - r}{n + r} \rightarrow n^r + (r - y)_n - {}^r y - r_0$$

$$m = \frac{-(r-y) \pm \sqrt{(r-y)^2 - 4(r-y-r)}}{2} = \frac{-r+y \pm \sqrt{y^2 + 4y + 4}}{2} \Rightarrow y^2 + 4y + 4 \geq 0$$

$$\Rightarrow (y+4)(y+2) \geq 0 \rightarrow \frac{-4}{+} \frac{-2}{-} \rightarrow R_f = [-\infty, -4] \cup [-2, +\infty)$$

$$f(x), \quad \underline{x - \frac{1}{\varepsilon} \leq x \leq x + \frac{1}{\varepsilon}}$$

$$n_1 - n_2 = 1 \rightarrow \Delta = 1 - k_2 - k_1 < 0 \rightarrow \text{unstable} \rightarrow Df_2 \text{ IR}$$

$$y^n - y + y = n^2 - n + \frac{1}{\varepsilon} \rightarrow (y-1)n^2 + (-y+1)n + y - \frac{1}{\varepsilon} = 0 \xrightarrow{y \neq 1} n = \frac{y-1 \pm \sqrt{(y-1)^2 - \varepsilon(y-1)(y-\frac{1}{\varepsilon})}}{\varepsilon(y-1)}$$

$$y \rightarrow n^2 - n + 1 = n^2 - n + \frac{1}{3} \rightarrow \text{فارق}$$

$$\rightarrow (y-1)^2 - \varepsilon(y-1)(y-\frac{1}{\varepsilon}) \geq 0 \rightarrow y^2 - y + 1 - \varepsilon y^2 + \omega y - 1 = -\varepsilon y^2 + \omega y = -\varepsilon y(y-1)$$

$$\rightarrow \frac{0}{-1} + \frac{1}{-1} \rightarrow R = [0 \ 1]$$

الف) $y = \sqrt{-n^2 \pm 2n - 1}$

$$y = -n^2 + 8n - 1 \rightarrow \max \begin{cases} -\frac{b}{2a} = -\frac{8}{-2} = 4 \\ -\Delta + 1.1 = 7 \end{cases}$$

$$\rightarrow (-\infty, \infty] \rightarrow R_f = [0, \sqrt{3}]$$

$$\psi = \sqrt{\frac{1}{2\pi}} e^{i k x}$$

$$y_2 \ln r - \lambda x \rightarrow \min \begin{cases} -\frac{b}{r\alpha} = -\frac{\lambda}{\varepsilon} = r \\ \lambda - 14 = -\lambda \end{cases}$$

$$\rightarrow [-1, +\infty) \rightarrow R_f = [-1, +\infty)$$

الف) $y = \log(n^3 - n + 1)$

$$n^k - n + 1 \xrightarrow[\text{توان فرد}]{\text{توان زوج}} R = 1R \xrightarrow[\text{g}]{\text{intercal}} (0, +\infty)$$

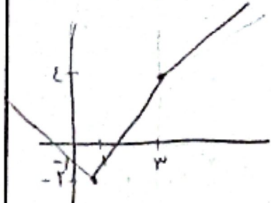
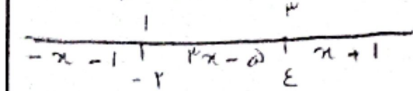
$$\Rightarrow R_f = 1R$$

$$\therefore \log_e \left[\frac{n!}{n} \right]$$

$$\frac{n^2+1}{n} = n + \frac{1}{n} \xrightarrow[n \rightarrow \infty]{} (1, +\infty) \text{ و } (1, +\infty)$$

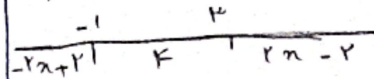
$\text{Key } r \rightarrow R_f = [1, +\infty)$

الف) $y = |x - 2| - |x - 3|$



$\rightarrow R_f = [-1, +\infty)$

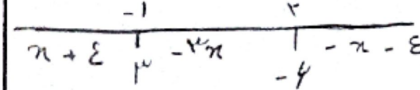
ب) $y = |x - 2| + |x + 1|$



$R_f = [3, +\infty)$

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$|x - 2| - |x + 2| \leq 1$

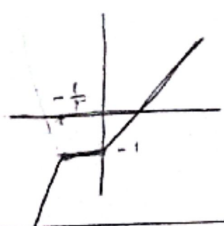


$\rightarrow \begin{cases} x \geq -\frac{1}{4} \\ x \leq -2 \end{cases}$

$R_f = (-\infty, -2] \cup [-\frac{1}{4}, +\infty)$

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$y = 3x - |x + 1| + |x|$

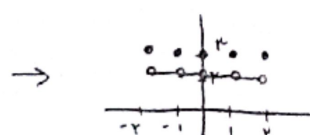
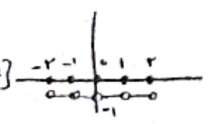


$R_f = \mathbb{R}$

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الف) $[x] + [3 - x] = 3 + [x] + [-x]$

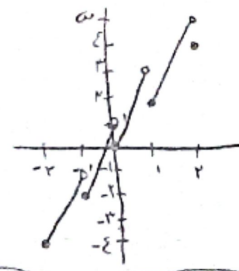
ملاحظة: $[x] + [-x] = 0$ if x is integer, else -1 .



$R = \{2, 3\}$

ب) $3x - [x]$

$\begin{aligned} -1 \leq x < -0.5 &\rightarrow 3x + 2 \\ -0.5 \leq x < 0 &\rightarrow 3x + 1 \\ 0 \leq x < 1 &\rightarrow 3x \\ 1 \leq x < 2 &\rightarrow 3x - 1 \end{aligned}$



$x \geq 2 \rightarrow y = 3$

$R_f = [0, \infty)$

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الف) $y = \sin^2 x - \sin x + 1$

$\min \sin x = -1 \rightarrow 1 + 1 + 1 = 3$

$\max \sin x = 1 \rightarrow 1 - 1 + 1 = 1$

$-\frac{b}{2a} = -\frac{1}{2} = \frac{1}{2} \rightarrow \frac{1}{4} - \frac{1}{4} + 1 = \frac{3}{2}$

$R_f = [\frac{3}{2}, 3]$

ب) $\sin^2 x + \sin^2 x + 1$

$\min \sin^2 x = 0 \rightarrow 0 + 0 + 1 = 1$

$\max \sin^2 x = 1 \rightarrow 1 + 1 + 1 = 3$

$-\frac{b}{2a} = -\frac{1}{2} \rightarrow \frac{1}{4}$

$R_f = [1, 3]$

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