

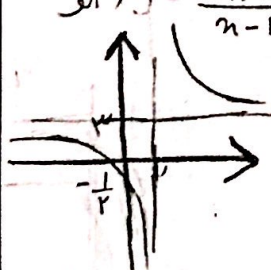
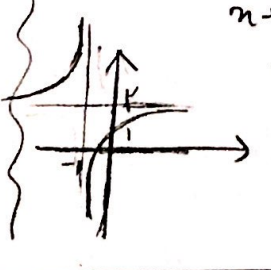
$$R_f = (-\infty, -1] \cup (0, +\infty)$$

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس پارسه A

الف) $y = x^3 - 3x^2 + 3x$ $y = x^3 - 3x^2 + 3x - 1$ $y = (x-1)^3 + 1 \Rightarrow \sqrt[3]{y-1} = x-1$ $x = \sqrt[3]{y-1} + 1$ $R_f = \mathbb{R}$	ب) $y = \frac{1}{x^2 - 2x}$ $\Delta = b^2 - 4ac$ $= 4y^2 - 4(y) - 1$ $= 4y^2 + 4y$ $y \neq 0$ $4y^2 + 4y \geq 0$ $y \geq 0$ $y \leq -1$ $R_f = (-\infty, -1] \cup (0, +\infty)$
---	---

الف) $y = x^2 - 2x + 10$ $y_s = \frac{-\Delta}{2a} = \frac{-(12)}{2} = -6$ $a > 0 \Rightarrow \min$ داری $\Delta = 16 - 4(1)(10) = 16 - 40 = -24$ $R_f = [6, +\infty)$	ب) $y = -x^2 + 4x + 3$ $y_s = \frac{-\Delta}{2a} = \frac{-16}{-2} = 8$ $a < 0 \Rightarrow \max$ داری $\Delta = 16 - 4(-1)(3) = 16 + 12 = 28$ $R_f = (-\infty, 8]$
ج) $y = \sqrt{x^2 - 2x - 3}$ $y_s = \frac{-\Delta}{2a} = \frac{-10}{2} = -5$ $a > 0 \Rightarrow \min$ داری $\Delta = 16 - 4(1)(-3) = 16 + 12 = 28$ $R_f = [-5, +\infty)$	د) $y = \sqrt{4x - x^2}$ $y_s = \frac{-\Delta}{2a} = \frac{-4}{-2} = 2$ $a < 0 \Rightarrow \max$ داری $\Delta = 16 - 4(-1)(0) = 16$ $R_f = [0, 2]$

الف) $y = x^3 - 2x^2 + 2x + 1$ $y' = 3x^2 - 4x + 2 = 0$ $\Delta = 16 - 24 = -8$ $R_f = \mathbb{R}$	ب) $y = x^3 - 6x^2 + 12x + 2$ $y' = 3x^2 - 12x + 12 = 0$ $\Delta = 144 - 144 = 0$ $R_f = \mathbb{R}$
ج) $y = \sqrt{x^3 - 6x^2 + 12x + 1}$ $y' = \frac{3x^2 - 12x + 12}{2\sqrt{x^3 - 6x^2 + 12x + 1}}$ $\Delta = 144 - 144 = 0$ $R_f = [0, +\infty)$	د) $y = (x^3 - 6x^2 + 12x + 1)^2$ $y' = 2(x^3 - 6x^2 + 12x + 1)(3x^2 - 12x + 12)$ $\Delta = 144 - 144 = 0$ $R_f = [0, +\infty)$

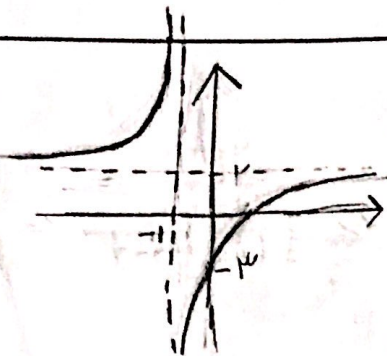
الف) $y = \frac{x+1}{x-2}$ $R_f = \mathbb{R} - \{2\}$ 	ب) $y = \frac{x+1}{x+1}$ $R_f = \mathbb{R} - \{-1\}$ 
---	---

الف) $y = \sqrt{\frac{x+1}{x+1}}$ $y = \sqrt{1} = 1$ $R_f = \{1\}$	ب) $y = \sqrt{\frac{x+1}{x-2}}$ $R_f = \mathbb{R} - \{2\}$
ج) $y = \sqrt{\frac{x+1}{x+1}}$ $R_f = \mathbb{R} - \{2\}$	د) $y = \sqrt{\frac{x+1}{x-2}}$ $R_f = \mathbb{R} - \{2\}$

$$y = \frac{1^n - 1^0}{n+1} \quad \text{الف}$$

۱- = ریشه منزع = مجاز قائم

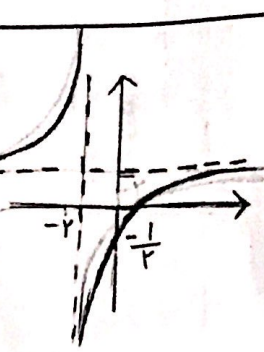
$$\frac{a}{c} = 1 = \text{مجانبا فقر}$$



$$b) \frac{r_n - 1}{n + 1}$$

۲- = محاسبه

۲ = مخالفه



$$\text{الف) } y = \sin x + \frac{1}{\sin x} \quad R_f = (I) \cup (II) = (-\infty, -1] \cup [1, +\infty)$$

$$\sin n > 0 \Rightarrow [r, +\infty) = (I)$$

$$\sin x < 0 \Rightarrow (-\infty, -1] = (\text{II})$$

$$c) y = \frac{\sqrt[n]{n^r + 1}}{\sqrt[n]{n}} = \sqrt[n]{\frac{n^r}{n}} + \frac{1}{\sqrt[n]{n}} = \sqrt[n]{n} + \frac{1}{\sqrt[n]{n}}$$

$$\Rightarrow R_f = (-\infty, -r] \cup [r, +\infty)$$

$$b) y = \frac{n^4 + 1}{n^3} = \frac{n^4}{n^3} + \frac{1}{n^3} = n + \frac{1}{n^3}$$

$$n > 0 \Rightarrow [r, +\infty) = (I)$$

$$\begin{aligned} n > c &\Rightarrow [r, +\infty) = (I) & R_f = (I) \cup (II) = (-\infty, -r] \cup [r, +\infty) \\ n < c &\Rightarrow (-\infty, -r] = (II) \end{aligned}$$

$$n(c) = (-\infty, -r] \quad (II)$$

$$2) y = \sqrt{n} + \frac{1}{\sqrt{n}}$$

$$n > 0 \Rightarrow R_f = [r, +\infty)$$

الف) $y = x^2 + \frac{1}{x^2 + 3}$

$$y = (n^r + r) + \left(\frac{1}{n^r + r} \right) - r$$

$$\Rightarrow (x^p + r) + \left(\frac{1}{x^p + r}\right) \geq \frac{1}{r} \quad \Rightarrow Rf = \left[\frac{1}{r}, +\infty\right)$$

$$\Rightarrow x^{r+1} + \frac{1}{x^{r+1}} - 1 \geq \frac{1}{x}$$

$$b) y = \frac{x^2 + \tilde{\omega}}{\sqrt{x^2 + \varepsilon}} = \frac{x^2 + \varepsilon}{\sqrt{x^2 + \varepsilon}} + \frac{1}{\sqrt{x^2 + \varepsilon}}$$

$$= \sqrt{n^r + \varepsilon} + \frac{1}{\sqrt{n^r + \varepsilon}} = a \quad R_f = \left[\frac{\infty}{1} + \infty \right) \wedge$$

$$n_{kz} > 1 \Rightarrow \text{كثافة مقدار} = \sqrt{\sigma_{kz}} + \frac{1}{\sqrt{\sigma_{kz}}} \quad \uparrow$$

$$\Rightarrow 1 + \frac{1}{r} = \frac{2}{r-2} \Rightarrow a \geq \frac{2}{r-2}$$

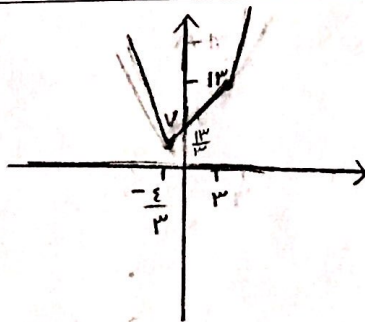
$$y = |x - \mu| + |\mu + \varepsilon|$$

$$-\frac{3}{2}$$

$$\begin{array}{|c|c|c|} \hline \psi_n - \psi_n - \varepsilon & \psi_n + \psi_n + \varepsilon & n - \psi + \psi_n + \varepsilon \\ \hline = -\varepsilon n - 1 & = \psi_n + \psi & = \varepsilon n + 1 \\ \hline \end{array}$$

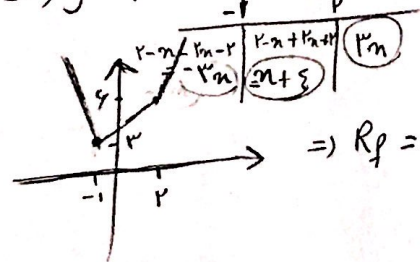
$$x = 1 \Rightarrow y = 1$$

$$n = -\frac{z}{\mu} \Rightarrow y = \frac{1\mu}{\mu}$$



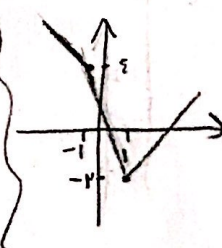
۷
دوره بندها
۲۰
خسب لومبار
۱
فرق بند

الف) $y = |x-2| + |2x+2|$



$$\Rightarrow R_f = [\psi, +\infty)$$

$$b) y = |x_{n-2}| - |x_{n+1}|$$



$$\Rightarrow R_f = [-r_2 + \infty)$$