



$$y = x^r - r x^{r-1} + r x$$

$$x^r - r x^{r-1} + r x + 1 - 1 = (n-1)^r + 1 = y$$

$$n-1 = \sqrt[r]{y-1} \Rightarrow n = \sqrt[r]{y-1} + 1$$

$$R_y = \mathbb{R}$$

$$\div) y = \frac{1}{x^r - r x}$$

$$y(x^r - r x) = 1 \Rightarrow y(x^r - r x) = 1$$

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

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

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

5 1

$$\div) y = x^r - r x + 1. \quad R_y = [r, +\infty)$$

$$\min \begin{cases} x = \frac{-b}{r a} = \frac{r}{r} = 1 \\ r - 1 + 1 = r \end{cases}$$

$$\div) y = -x^r + r x + r \quad R_y = (-\infty, r]$$

$$\max \begin{cases} x = \frac{-b}{r a} = \frac{-r}{-r} = 1 \\ -1 + 1 + r = r \end{cases}$$

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$$\div) y = \sqrt{x^r - r x - r} \quad \sqrt{[-r, +\infty)}$$

$$\min \begin{cases} x = \frac{-b}{r a} = \frac{r}{r} = 1 \\ r - 1 - r = -r \end{cases} \quad R_y = [0, +\infty)$$

$$\div) y = \sqrt{r x - x^r} \Rightarrow \sqrt{-x^r + r x}$$

$$\max \begin{cases} \frac{-b}{r a} = \frac{-r}{-r} = 1 \\ r - r = 0 \end{cases} \quad \sqrt{(-\infty, r]} \Rightarrow R_y = [0, r]$$

$$\div) y = x^r - \Delta n^r + r_{n+1}$$

$$R_{y_1} = \mathbb{R}$$

$$\div) y = x^r - r x^r + r_{n+1} + r$$

$$R_{y_1} = \mathbb{R}$$

5 3

$$\div) y = \sqrt{x^r - r x^r + \Delta n + 1}$$

$$R_{y_1} = [0, +\infty)$$

$$\div) y = (n^r - r n^r + r_{n+1})^r$$

$$R_{y_1} = [0, +\infty)$$

$$\div) y = \frac{r_{n+1}}{n-r} \Rightarrow \frac{a n + b}{c n + d}$$

$$R_{y_1} = \mathbb{R} - \left\{ \frac{a}{c} \right\}$$

$$\mathbb{R} - \left\{ \frac{r}{1} \right\} \Rightarrow \mathbb{R} - \{r\}$$

$$\div) y = \frac{r_{n+1}}{n+1}$$

$$R_{y_1} = \mathbb{R} - \{1\}$$

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

$$\div) y = \sqrt{\frac{r_{n+1}}{r-n}} \Rightarrow \sqrt{\frac{r_{n+1}}{-n+r}}$$

$$\sqrt{\mathbb{R} - \{r\}} \Rightarrow R_{y_1} = [0, +\infty) - \{r\}$$

$$\sqrt{\mathbb{R} - \{r\}} \Rightarrow R_{y_1} = [0, +\infty)$$

5 5

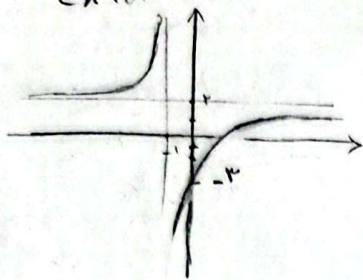
محاسب افقی . ۵/۵

$$\text{الف) } y = \frac{r_n - r}{n+1} \Rightarrow \frac{an+b}{cn+d}$$

$$n+1=0 \rightarrow n=-1$$

$$\sigma_{10} \rightarrow \frac{\sigma}{-1} = \tau$$

$$x=0 \rightarrow y = -1$$

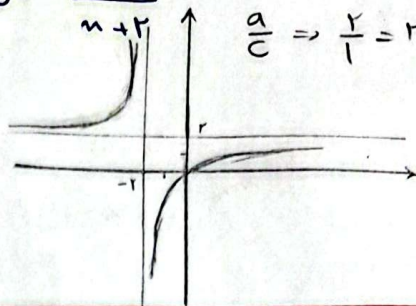


$$\rightarrow y = \frac{r_n - 1}{n + r}$$

$$x + y = 0 \rightarrow x = -5$$

$$\frac{a}{c} \Rightarrow \frac{r}{1} = r$$

$$x=0 \rightarrow y = -\frac{1}{4} \quad 6$$



$$y = \sin \theta + \frac{1}{\sin \theta}$$

$$R_{g_1} = (-\infty, -r] \cup [r, +\infty)$$

$$\rightarrow y = \frac{x^4 + 1}{x^2} \Rightarrow x^2 + \frac{1}{x^2}$$

$$R_{y,r} = (-\infty, -r] \cup [r, +\infty)$$

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

$$R_{y_r} = (-\infty, -r] \cup [r, +\infty)$$

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

$$R_{y_f} = [r, +\infty)$$

$$\text{ii) } y = x^r + \frac{1}{x^r + r} + r - r$$

$$\therefore y = \frac{x^r + a}{\sqrt{x^r + k}} \Rightarrow \sqrt{x^r + k} + \frac{1}{\sqrt{x^r + k}}$$

$$\frac{n_T + r}{r} + \frac{1}{n_T + r} - r \Rightarrow r = n_T + \frac{1}{n_T}$$

$$Y + \frac{1}{r} \Rightarrow \frac{\Delta}{r}$$

$\gamma \leq \sqrt{2\tau_k}$ کافی حد

$$-\frac{1}{2} \quad \pi \quad - \quad - \quad - \quad + \quad 2$$

$$R_{gr} = \left[\frac{\omega}{r}, +\infty \right)$$

$$R_{y_1} = [1/r, +\infty)$$

$$y = |a - r| + |r_n + r|$$

$$x - r = 0.$$

$$n = r$$

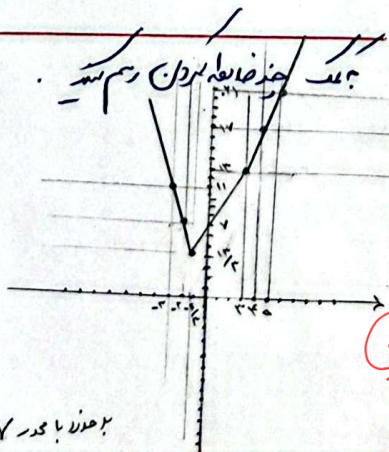
$$r_2 + r = 0.$$

$$r_n = r$$

$$n = -\frac{K}{r}$$

$$\begin{array}{c}
 \begin{array}{ccc}
 & -\frac{\pi}{4} & \pi \\
 \hline
 -n+\pi-\pi_n-\pi & -n+\pi_1\pi_n+\pi & 2\pi-\pi_1\pi_n+\pi \\
 -F_{n-1} & \textcircled{\frac{\pi}{4}} & \pi_n+\pi & \textcircled{\pi} & F_{n+1}
 \end{array} \\
 \\
 \begin{array}{cc}
 -\pi \rightarrow -F_{n-1} \Rightarrow V & \pi \rightarrow F_{n+1} \Rightarrow IV \\
 -\pi \rightarrow -F_{n-1} \Rightarrow II & 2\pi \rightarrow F_{n+1} \Rightarrow VI
 \end{array}
 \end{array}$$

$x=0 \Rightarrow y=7$ $y=7$ بر محور y



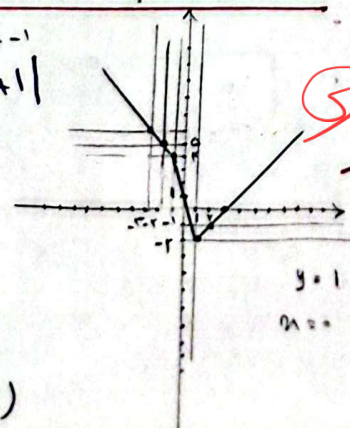
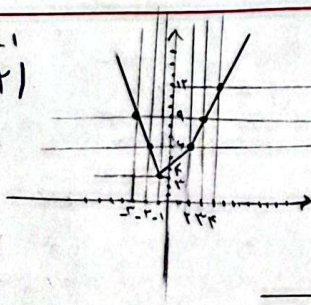
الف) $y = |u-2| + |2u+2|$ $u=2$ $u=-1$

$$\therefore y = |x_n - 2| - |x_{n+1}|$$

$$r \rightarrow n-r \rightarrow -1$$

$$-2 \rightarrow -x + y = 0$$

$$-2 \rightarrow -2 + 2 \Rightarrow 0$$



$y = 1$ (مقدار ۱)
 $x = 0 \Rightarrow y = 1$

$$R_{y_1} = [r_1, +\infty)$$

$$R_{y1} = [-r, +\infty)$$