

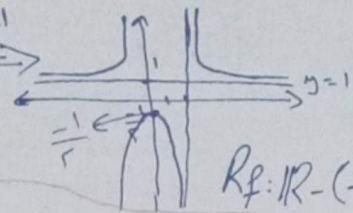
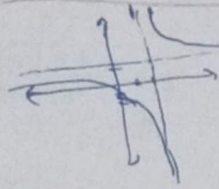
تابع را بدون قدر مطلق

$$y = \frac{|n|+1}{|n|-2}$$

درسم گره و سپس نسبت به محور

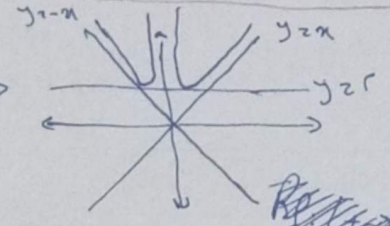
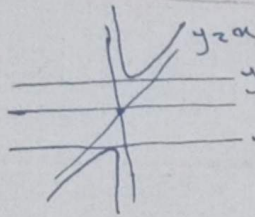
رها فریبندی کنیم

نقطه



(2) 1

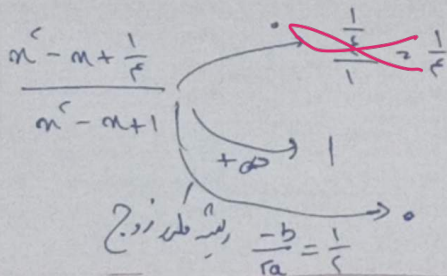
$$y = \frac{n+1}{n} \Rightarrow 1 + \frac{1}{n}$$


$$R_f: [+5, +\infty)$$

$y = \frac{x^2 + (n-r)}{n+r}$ $\Rightarrow ym + ry = x^2 + (n-r)$ $\Rightarrow x^2 + (n-r) - ym - ry = 0$ $\Rightarrow x^2 + n - ym - ry - r = 0$ $\Rightarrow x^2 + n(r-y) - ry - r = 0$

$\Delta \geq 0 \rightarrow (y-r)^2 - 4(-ry+r) \geq 0$ $\Rightarrow (y+r)(y+r) \geq 0$ $\Rightarrow R_f: [-\infty, -r] \cup [r, \infty)$

$$J = \frac{n^5 - n + \frac{1}{5}}{n^5 - n + 1} \quad D_f: \mathbb{R} \rightarrow \mathbb{R} \text{ (مشتق خارج)} \rightarrow n^5 - n + 1 \Rightarrow \Delta < 0 \Rightarrow \text{مشتق ندارد} \Rightarrow D_f: \mathbb{R} \quad (1.25) \quad (5)$$



برای برداشتن کردن ~~خوردن~~ اعیان و اشیاء

$\Rightarrow R_f: [0, 1]$

$$\frac{(n - \frac{1}{p})^2}{(n - \frac{1}{p})^2 + \frac{3}{k}}$$
 به واقع داری حدود (اینور فیکری) به بین صفر تا ۱ است

الف) $y = \sqrt{-x^2 + 4x - 1} \Rightarrow -x^2 + 4x - 1 \xrightarrow{\text{مربع مكمل}} \text{Max}(f(x)) \rightarrow \frac{-b}{2a} \Rightarrow \frac{4}{2 \times (-1)} = -2$

$$\rightarrow a_2(r) \rightarrow y_2 = -t + 1 - 1 = r \Rightarrow R_f: [-2, r] \Rightarrow \mathcal{R}_{\mathcal{R}} [0, \checkmark r]$$

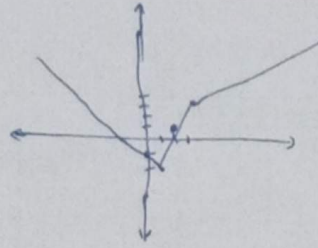
$$\rightarrow y = \sqrt{cm - an} \rightarrow cm - an \xrightarrow{\text{Min}} \text{Min}(cm) \rightarrow \frac{-b}{ca} \rightarrow \frac{-(-1)}{ca} = 1 \rightarrow 1 - 14 = -13$$

$$\rightarrow R_f: [-1, +\infty) \rightarrow R_{\sqrt{f}}: [-1, \sqrt{e})$$

الف/ $y = \log(x^2 - x + 1)$ $= \log(f(x)) \Rightarrow Rf: \mathbb{R} \xrightarrow{\substack{\text{دایره ی واحد} \\ \text{و} \log \text{ تابع} \\ \text{مربع} \text{ و} \text{مربع} \text{ و} \text{مربع}}} \log(\cdot) : (-\infty, +\infty) = \mathbb{R}$ (۲) (۵)

$$\rightarrow y = \log_r \left(\frac{n^{r+1}}{n} \right) \rightarrow \frac{n^{r+1}}{n} > \cdot, n \neq \cdot \quad n + \frac{1}{n} \xrightarrow{n \geq r} n + \frac{1}{n} \geq r, R_f: [r, +\infty) \Rightarrow \log_r [r, +\infty) = \underline{\underline{[1, +\infty)}} \rightarrow R_{\log f}: [1, +\infty)$$

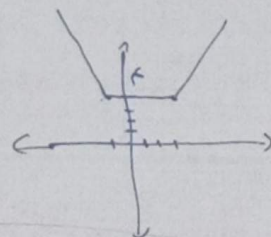
الف) $y = |m-r| - |n-r|$



$\min f(m) = -r$
 $R_f: [-r, \infty)$

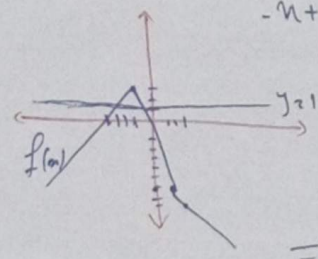
(۲) (۹)

ب) $y = |n-r| + |m+1|$



$\min f(m) = +r$
 $R_f: [r, +\infty)$

$|n-r| - |m+r| \leq 1$

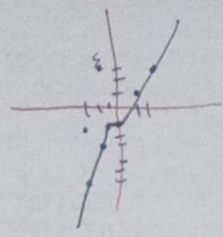


$-n+r - (-m-r) = m+r \Rightarrow m+r \leq 1$
 $m \leq 1-r$
 $-m+r - (m+r) = -2m \Rightarrow -2m \leq 1$
 $\Rightarrow m \geq -\frac{1}{2}$
 $\Rightarrow m \in (-\infty, -\frac{1}{2}) \cup [\frac{1}{2}, +\infty)$

(۲) (۵)

$y = |m-r| - |m+1| + |n|$

$n \geq 1 \rightarrow y = -r$
 $n = -1 \rightarrow y = -r$
 $n = \frac{1}{r} \rightarrow y = -1$
 $n = 0 \rightarrow y = -1$

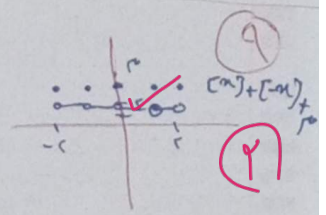
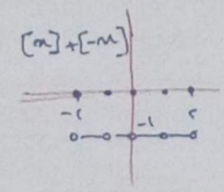


$R_f: \{r, \frac{1}{r}\}$

(۲) (۸)

الف) $y = [x] + [r-x] = [x] + [-x] + r$

$R_f: \{r, \frac{1}{r}\}$

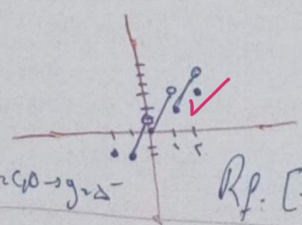


(۹)

(۲)

ب) $|m-r| - [x] = |m+n| - [x]$

$n = r \rightarrow y = -r$
 $n = -1 \rightarrow y = -1$
 $n = 1 \rightarrow y = r$
 $n = 0 \rightarrow y = -r$
 $n = \frac{1}{r} \rightarrow y = \frac{r}{r}$
 $n = r \rightarrow y = r$
 $n = 0 \rightarrow y = -r$



$R_f: [-r, \frac{1}{r})$

الف) $y = \sin^2 m - \sin^2 n + 1$

$R_f: [\frac{r}{r}, \frac{1}{r})$

(۲) (۵)

ب) $y = \sin^2 m + \sin^2 n + 1$