

تالیف شماره 6

سایه‌ها را ن (14) 5

$$1) \quad y = \frac{1}{x^2 - 2x} \Rightarrow y(x^2 - 2x) = 1 \Rightarrow x^2 - 2x - \frac{1}{y} = 0$$

$$R_F = R$$

$$\Delta = 4 + \frac{4}{y} \geq 0 \Rightarrow y \geq -1$$

$$\Rightarrow \text{بردار} = (-\infty, -1] \cup (0, +\infty)$$

2) $y = -x^2 + 6x + 17$

$$\begin{cases} \frac{-b}{2a} = \frac{-6}{-2} = 3 \rightarrow y_{\max} \\ -(3)^2 + 6(3) + 17 = 17 \end{cases}$$

بردار $(-\infty, 17]$

الف) $y = x^2 - 4x + 1$

$$\begin{cases} \frac{-b}{2a} = \frac{4}{2} = 2 \rightarrow y_{\min} \\ (2)^2 - 4(2) + 1 = -7 \end{cases}$$

بردار $[-7, +\infty)$

ب) $y = \sqrt{6x - x^2}$

$$\begin{cases} \frac{-b}{2a} = \frac{6}{-2} = -3 \rightarrow y_{\max} \\ 6(-3) = -18 \end{cases}$$

بردار $[-18, 0]$

3) الف) $y = x^3 - 6x^2 + 12x + 1$

بردار R زیرا مشتق می‌باشد

ب) $y = (x^3 - 6x^2 + 12x + 1)^2$

بردار $[0, +\infty)$ زیرا دو به دو همیشه اعداد مثبت

ج) $y = \sqrt{x^3 - 6x^2 + 12x + 1}$

بردار $[0, +\infty)$ زیرا رادیکال پس اعداد مثبت

4) الف) $y = \frac{x+1}{x-2}$

$$\Rightarrow \frac{1}{a} \leq y \leq \frac{1}{b} \Rightarrow R_F = R - \left\{ \frac{1}{a} \right\} \Rightarrow R_F = R - \{2\}$$

ب) $y = \frac{x+1}{x+1}$

$$\Rightarrow \frac{1}{a} \leq y \leq \frac{1}{b} \Rightarrow R_F = R - \{1\}$$

ج) $y = \sqrt{\frac{x+1}{x+1}}$

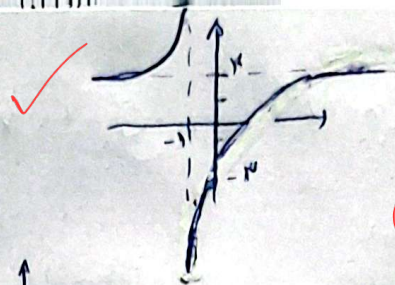
$$\Rightarrow R_F = [0, +\infty) - \left\{ \frac{1}{2} \right\} = R_F = [0, +\infty) - \left\{ \frac{1}{2} \right\}$$

د) $y = \sqrt{\frac{x+1}{x-2}}$

$$\Rightarrow y^2 = \frac{x+1}{x-2} \Rightarrow y^2(x-2) = x+1 \Rightarrow y^2 x - 2y^2 = x+1 \Rightarrow y^2 x - x = 2y^2 + 1 \Rightarrow x(y^2 - 1) = 2y^2 + 1 \Rightarrow x = \frac{2y^2 + 1}{y^2 - 1}$$

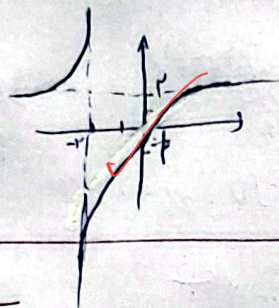
بردار $[-1, +\infty)$

1- ویکسج
 $y = \frac{2n-1}{n+1}$ (س)
 2- جانب افق
 3- د کس



2-
 (الف)

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 $y = \frac{2n-1}{n+1}$ (س)
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1-

(ص)
 (الف)
 $y = \frac{2n+1}{n^2} \leq \frac{1}{n^2}$
 $R_F = (-\infty, -2] \cup [2, +\infty)$

(ب)



(الف)
 $y = \frac{2n+1}{n^2} \leq \frac{1}{n^2}$
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 3- ویکسج

(ج)
 $y = \sqrt{n} + \frac{1}{\sqrt{n}}$
 $R_F = [2, +\infty)$

(د)

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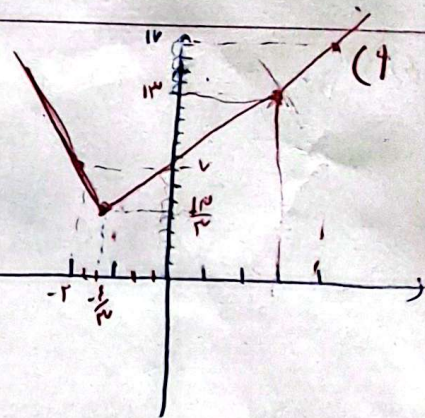
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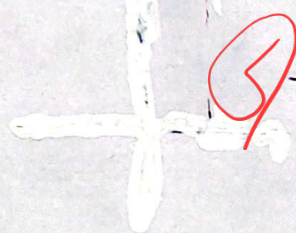
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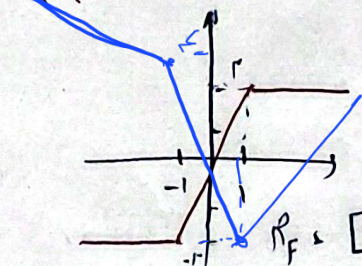
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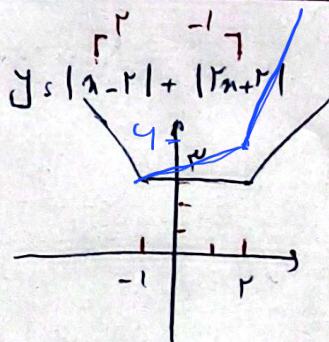
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