

نام و نام خانوادگی یاسین پاسخنامه تشریحی تکلیف شماره ۴ کلاس دوازدهم ریاضی A

$$\left. \begin{aligned} \xrightarrow{x} f(-x) - x f(x) &= 2|x| + 1 \xrightarrow{x} x f(-x) - x^2 f(x) = 2x|x| + x \\ \xrightarrow{-x} f(x) + x f(-x) &= 2|x| + 1 \rightarrow x f(-x) + f(x) = 2|x| + 1 \end{aligned} \right\} \rightarrow$$

$$\rightarrow f(x) = \frac{2x|x| + x - 2|x| - 1}{-x^2 - 1} \rightarrow f(x) = \begin{cases} \frac{2x^2 - x - 1}{-x^2 - 1} & x > 0 \\ \frac{-2x^2 + 3x - 1}{-x^2 - 1} & x < 0 \end{cases}$$

$$x=0 \rightarrow f(0) = 4 \rightarrow f(0) = 3 \Rightarrow f(x) = x^2 - 3x + 3$$

$$f(x^2) = x^4 - 3x^2 + 3$$

$$x^2 + (1-y)x + (y+2) = 0 \rightarrow x = \frac{-(1-y) \pm \sqrt{(1-y)^2 - 4(y+2)}}{2} \xrightarrow{\Delta \geq 0}$$

$$\rightarrow y^2 - 4y - 7 \geq 0 \rightarrow (y-7)(y+1) \geq 0 \quad \frac{x}{y} = \frac{-1 \pm \sqrt{1-4(y+2)}}{2} \rightarrow R_f = (-\infty, -1] \cup [7, +\infty)$$

$$\text{الف)} \quad x_s = \frac{-b}{2a} = \frac{0}{2} = 0$$

$$y_s = 2\left(\frac{0}{2}\right)^2 + 0\left(\frac{0}{2}\right) + 1$$

$$y_s = -\frac{14}{\lambda}$$

$$R_y = \left[-\frac{14}{\lambda}, +\infty\right)$$

$$\Rightarrow x_s = \frac{4}{2} = 2$$

$$y_s = 2$$

$$R_y = [0, 2]$$

$$\mathbb{R} \xrightarrow{\sqrt{\cdot}} [0, +\infty)$$

$$R_f = [0, +\infty)$$

$$\mathbb{R} \xrightarrow{\text{log}} (-\infty, +\infty)$$

$$R_y = (-\infty, +\infty)$$

الف)

$$R_f = \mathbb{R} - \left\{\frac{3}{2}\right\}$$

ب)

$$R_f = [0, +\infty) - \left\{\frac{3}{2}\right\}$$

$$\mathbb{Z}) \quad y = \sqrt{x^2 + 3} + \frac{1}{\sqrt{x^2 + 3}}$$

$$\min = \sqrt{3} \quad \frac{1}{\sqrt{3}}$$

$$= \sqrt{3} + \frac{1}{\sqrt{3}} = \frac{4\sqrt{3}}{3}$$

$$R_f = \left[\frac{4\sqrt{3}}{3}, +\infty\right)$$

$$\gamma) \quad x^2 + 4 + \frac{1}{x^2 + 4} + (-4)$$

$$\min = 4 \quad \frac{1}{4} - 4 = -\frac{15}{4}$$

$$= 4 + \frac{1}{4} - 4 = \frac{1}{4}$$

$$R_f = \left[\frac{1}{4}, +\infty\right)$$

مثال: $y x^p - y = p x^p + f$

$x^p = \frac{f+y}{y-p} \rightarrow x = \sqrt{\frac{f+y}{y-p}}$

$\frac{x}{p} = \frac{-f}{p} = \frac{p}{p}$

$R_f = (-\infty, -f] \cup (p, +\infty)$

$\min z = 0 \quad \frac{0+f}{0-1} = -f$
 $\max z = +\infty \quad \frac{p(+\infty)+f}{(+\infty)-1} \approx p$

$R_f = (-\infty, -f] \cup (p, +\infty)$

$\sin x \rightarrow \frac{p+f}{1-p} = -p$
 $\rightarrow \frac{-p+f}{-f} = -\frac{1}{p}$
 $R_f = [-p, -\frac{1}{p}]$

الف)



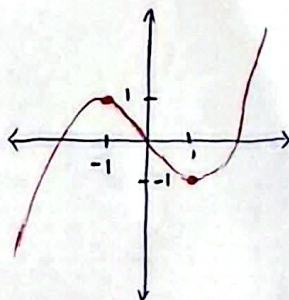
$R_f = [0, +\infty)$

عدد $\frac{3}{4}$ در بدنه است چون عبارت داخل
 قدر مطلق می تواند عدد $-\frac{3}{4}$ را در بدنه خود داشته باشد
 پس با قرار گرفتن در قدر مطلق به ما مقدار $\frac{3}{4}$ را می دهد.

$y = \sqrt{\frac{9(x-p)}{f(x-p)}} = \sqrt{\frac{4}{f}} = \frac{p}{f}$

$R_f = \left\{ \frac{p}{f} \right\}$

$y = \begin{cases} x^p - p x & x \geq 0 \\ -x^p - p x & x < 0 \end{cases}$



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

$y_s = -1$

$R_f = \mathbb{R}$

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

$y_s = 1$

