

روز دهم دختر A

(18.1.7)

رونا الورس

Viana

subject: سائنس: ۳

Year: Month: Date:

$$y = \frac{n^p + n + p}{n-1} \Rightarrow ny - y = n^p + n + p \Rightarrow n^p + (1-y)n + p + y = 0 \quad (1)$$

$$\Rightarrow n = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{(y-1) \pm \sqrt{(1-y)^p - 4(p+y)}}{2} \Rightarrow (1-y)^p - 4(p+y) \geq 0$$

$$\Rightarrow y^p - 2y + 1 - 4y - 1 \geq 0 \Rightarrow y^p - 4y - 2 \geq 0 \Rightarrow (y-2)(y+1) \geq 0 \Rightarrow \frac{-1}{+} \frac{V}{-} \frac{+}{+}$$

$$\Rightarrow R_f = IR = (-1, V) \quad \checkmark$$

$$الف) y = 2n^p - \omega n + 1 \Rightarrow S \left| \frac{-b}{2a} = \frac{\omega}{2} \right. \quad \frac{-\Delta}{4a} = \frac{4ac - b^2}{4a} = \frac{1 - 4\omega}{4} = -\frac{1\omega}{1} \quad \checkmark$$

$$R_f = [y_5, +\infty) \Leftarrow \bigcup \omega \downarrow \min$$

$$L \Rightarrow R_f = \left[-\frac{1\omega}{1}, +\infty\right) \quad \checkmark$$

$$\Rightarrow \bigcup \omega \downarrow \max \Rightarrow R_f = (-\infty, y_5]$$

$$ب) y = \sqrt{-n^p + 4n - \omega} \quad \frac{-n^p + 4n - \omega}{2} \rightarrow S \left| n_5 = \frac{-b}{2a} = p \right.$$

$$R_f = \sqrt{(-\infty, p]} = [0, p] \quad \checkmark \quad \Leftarrow y_5 = -(p)^p + 4(p) - \omega = p$$

$$c) y = \sqrt{x^{\nu} - \mu x^{\nu} + \kappa x + 1} \Rightarrow R_f = \sqrt{\mathbb{R}} = [a, +\infty) \quad \text{✓} \quad (1)$$

$$d) \log(x^{\mu} - \gamma x^{\mu} + \nu x + \kappa) = \log \mathbb{R} \Rightarrow R_f = \mathbb{R} = (-\infty, +\infty) \quad \text{✓}$$

$$e) y = \frac{\mu x + 1}{\nu x - \gamma} \Rightarrow R_f = \mathbb{R} - \left\{ \frac{a}{c} \right\} = \mathbb{R} - \left\{ \frac{\mu}{\nu} \right\} \quad \text{✓} \quad (1, \nu \neq 0) \quad (1)$$

$$f) y = \sqrt{\frac{\kappa x + 1}{x - \mu}} \Rightarrow R_f = \sqrt{\mathbb{R} - \left\{ \frac{a}{c} \right\}} = \sqrt{\mathbb{R} - \{ \mu \}} \Rightarrow R_f = [0, +\infty) - \{ \mu \} \quad \text{✓}$$

✓

0/10

$$c) y = \frac{x^2 + k}{\sqrt{x^2 + \mu}} = \frac{x^2 + \mu + 1}{\sqrt{x^2 + \mu}} = \sqrt{x^2 + \mu} + \frac{1}{\sqrt{x^2 + \mu}}$$

$= \sqrt{\mu} = \text{مقدار ثابت}$

$$\Rightarrow \lim_{x \rightarrow \pm\infty} y = \sqrt{\mu} + \frac{1}{\sqrt{\mu}} = \frac{10}{\sqrt{\mu}} = \frac{10\sqrt{\mu}}{\mu} \Rightarrow R_f = \left[\frac{10\sqrt{\mu}}{\mu}, +\infty \right)$$

$\frac{10}{\sqrt{\mu}} = \frac{10\sqrt{\mu}}{\mu}$

$$g) x^2 + \frac{1}{x^2 + k} = x^2 + k + \frac{1}{x^2 + k} - k$$

$\rightarrow \text{مقدار ثابت}$

$$\text{if } k=0 \Rightarrow x^2 + \frac{1}{x^2} - k = \frac{1}{k} \Rightarrow R_f = \left[\frac{1}{k}, +\infty \right)$$

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روشن اصلی : $y = \frac{3x^2 + 4}{x^2 - 1} \Rightarrow x^2 = -\frac{-y-4}{y-3} = \frac{y+4}{y-3}$

$\Rightarrow x = \pm \sqrt{\frac{y+4}{y-3}} \Rightarrow \frac{y+4}{y-3} \geq 0 \Rightarrow \frac{-4}{+} \frac{3}{-} \Rightarrow R_f = \mathbb{R} - (-4, 3]$

(4) (3)

برای درجه 2 صادق است $\Delta = b^2 - 4ac \geq 0$ پس $3 \neq y$ به قرار است

$\Rightarrow 0 - 4(3-y)(4+y) \geq 0 \Rightarrow -4(11 + 4y + 4y^2) \geq 0 \Rightarrow (2y+11)(2y-9) \geq 0$

if $y=3 \Rightarrow 3x^2-3=3x^2+4 \Rightarrow R_f = \mathbb{R} - (-4, 3]$
 $\Rightarrow -3 \neq 4 \Rightarrow y$ نمی تواند 3 باشد

برای مقدار مثبت $x^2 = 0 \Rightarrow y = \frac{4}{-1} = -4$
 $x^2 - 1 = 0 \Rightarrow x^2 = 1 \rightarrow$
 خارج می تواند صفر شود پس خارج دور
 عدد مقرر است.
 if $x^2 = +\infty \Rightarrow y = \frac{3}{1} = 3$
 به قرار حدودی

$\Rightarrow R_f = (-\infty, -4] \cup (3, +\infty) = \mathbb{R} - (-4, 3]$

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$$y = \frac{p \sin n - 1}{\sin n + p} \quad 1) \rightarrow \sin n = \frac{py + 1}{y - p} = \frac{py + 1}{p - y} \Rightarrow y \neq p \quad (1)$$

$$\Rightarrow -1 \leq \frac{py + 1}{p - y} \leq 1 \Rightarrow \frac{py + 1}{p - y} \geq -1 \Rightarrow \frac{py + 1}{p - y} + 1 \geq 0 \Rightarrow \frac{py + p}{p - y} \geq 0 \quad \checkmark$$

$$\Rightarrow \frac{-\frac{p}{y} + \frac{p}{y}}{0} \Rightarrow y \in [-\frac{p}{p}, p) \quad (1) \quad \checkmark$$

$$\Rightarrow \frac{py + 1}{p - y} \leq 1 \Rightarrow \frac{py + 1}{p - y} - 1 \leq 0 \Rightarrow \frac{py - 1}{p - y} \leq 0 \quad \checkmark$$

$$\Rightarrow R_f = (1) \cap (2) = [-\frac{p}{p}, \frac{1}{p}] \quad \checkmark$$

دوسری ترازو لیسہ = محدود مقدار در نقطه است

$$\Rightarrow y = \frac{p \sin n - 1}{\sin n + p} \quad \sin n = 1 \rightarrow \frac{1}{p} \quad \sin n = -1 \rightarrow -\frac{p}{p}$$

$$\Rightarrow R_f = [-\frac{p}{p}, \frac{1}{p}] \quad \checkmark$$

$$\Rightarrow \sin n + p \in [p, p] \Rightarrow \text{خرج نمی توانیم گرفت} \Rightarrow \text{باز می بینیم که زیر نظر است}$$

$$y = \frac{n^2 - n + \frac{1}{p}}{n^2 - n + 1} \Rightarrow n^2 - n + 1 \neq 0 \Rightarrow \Delta = b^2 - 4ac = 1 - 4 = -3 \quad (4)$$

است $\Delta < 0$ و $\Delta > 0$ است $\Delta = 0$ است

$$\left. \begin{array}{l} \text{if } n = -\infty, y \approx 1 \\ \text{if } n = +\infty, y \approx 1 \\ \text{if } n = \frac{-b}{2a} = \frac{1}{2}, y = 0 \end{array} \right\} \Rightarrow \boxed{D_f = \mathbb{R}} \quad \checkmark$$

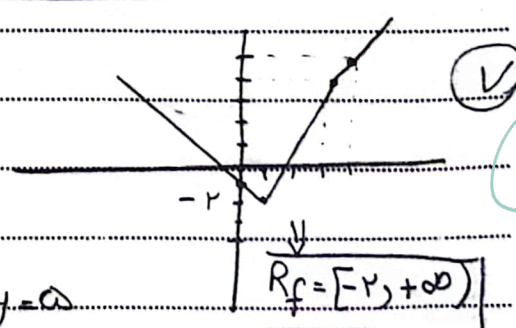
$$\Rightarrow R_f = [0, 1] \quad \checkmark$$

$$y = |n - p| - |n - q|$$

$\downarrow \quad \quad \downarrow$
 $n = 1 \quad n = p$

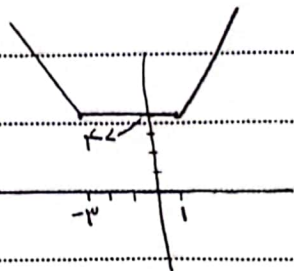
$$\text{if } n = 0 \Rightarrow y = -1 \quad \text{if } n = 1 \Rightarrow y = -p$$

$$\text{if } n = p \Rightarrow y = 0 \quad \text{if } n = q \Rightarrow y = 0$$



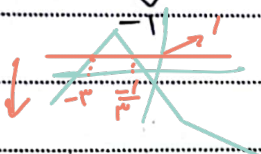
ب) $y = |x+3| + |x-1|$

$R_f = [-3, +\infty)$



(V)

$|x-1| - |x+3| \leq 1$



$-x+3 \geq x+3$ $\Rightarrow x \leq -3$	$-x+3 \geq -x-3$ $\Rightarrow 3 \geq -3$ $\Rightarrow x \leq -\frac{1}{3}$	$x-1 \geq x+3$ $\Rightarrow -1 \geq 3$ $\Rightarrow x \geq -3$
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$R_f = (-\infty, -3] \cup (-\frac{1}{3}, 1] \cup \{x\}$

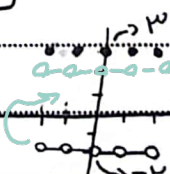
$x \in (-\infty, -3] \cup (-\frac{1}{3}, 1] \cup \{x\}$

الف) $y = [x] + [3-x] = [x] + [-x] + 3$

$x \in [-2, 2]$

$\begin{cases} x \in \mathbb{Z} \Rightarrow y = 0 \\ x \notin \mathbb{Z} \Rightarrow y = -1 \end{cases}$

$\Rightarrow \begin{cases} x \in \mathbb{Z} \Rightarrow y = 3 \\ x \notin \mathbb{Z} \Rightarrow y = 2 \end{cases}$



ملاحظة: $R_f = \{2, 3\}$
ملاحظة: $! 104$

ب) $y = 3x - [x]$

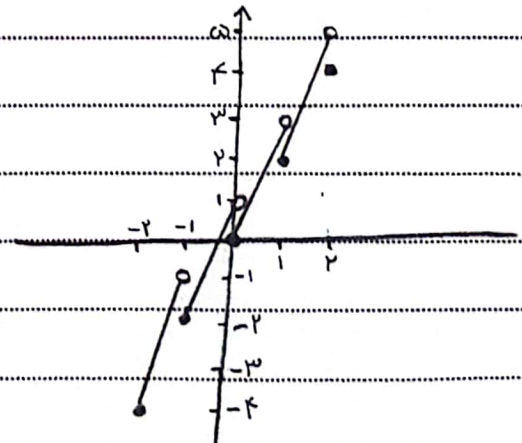
$x \in [-2, -1) \Rightarrow y = 3x + 2$

$x \in [-1, 0) \Rightarrow y = 3x + 1$

$x \in [0, 1) \Rightarrow y = 3x$

$x \in [1, 2) \Rightarrow y = 3x - 1$

$x = 2 \Rightarrow y = 3(2) - 2 = 4$



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الف) $y = \sin^2 x - \sin x + 1$ $\xrightarrow{\sin x = -1} (-1)^2 - (-1) + 1 = 3$ (10)

$\xrightarrow{\sin x = 1} (1)^2 - (1) + 1 = 1$

$\hat{O}\hat{O} \sqrt{\sin x = \frac{1}{p}} \leftarrow \xrightarrow{\sin x = \frac{-b}{pa}} \left(\frac{1}{p}\right)^2 - \left(\frac{1}{p}\right) + 1 = \frac{1}{p} - \frac{1}{p} + 1 = \frac{p}{p}$

$\Rightarrow R_f = \left[\frac{p}{p}, p \right]$

ب) $y = \sin^2 x + \sin^2 x + 1$ $\left. \begin{array}{l} \xrightarrow{\sin^2 x = 0} y = 1 \\ \xrightarrow{\sin^2 x = 1} y = 3 \end{array} \right\} \Rightarrow R_f = [1, 3]$

$\sin^2 x = \frac{-b}{pa} = -\frac{1}{p} \hat{O}\hat{O} \hat{E} \rightarrow \sin^2 x$