

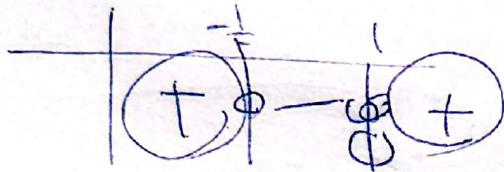
دینا سقایی

دینا سقایی

سوال الف:

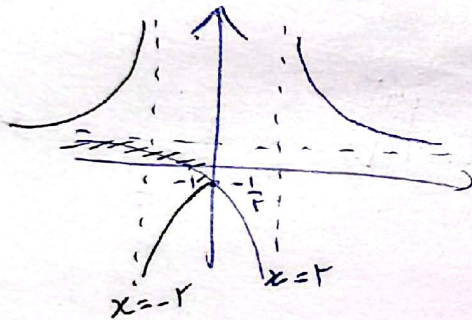
$$|x| - 2y = |x| + 1$$

$$\rightarrow |x|(y-1) = 2y+1 \rightarrow |x| = \frac{2y+1}{y-1} \geq 0$$



$$R_f = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$$

$$م: y = \frac{x^2 + 3}{x-2} = 1 + \frac{x}{x-2}$$



y=1

$$R_f = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$$

$$y = |x| + \frac{1}{|x|} \quad (سوال ا-ب) \quad a > 0$$

$$R_f = [2, +\infty)$$

~~$$y = \frac{(n^2 + 2n - 2)}{(n-1)}$$~~

سوال 2

$$yx + 3y = x^2 + 2n - 2 \Rightarrow n^2 + x(2-y) - 2y = 0$$

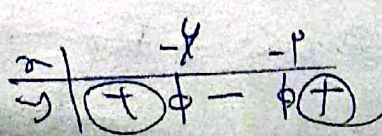
$$n = \frac{y^2 \pm \sqrt{(2-y)^2 + 4(2-y)}}{2}$$

$$4 + y^2 - 4y + 4 + 4y \geq 0$$

$$y^2 + 4y + 8 \geq 0$$

$$(y+2)(y+4) \geq 0$$

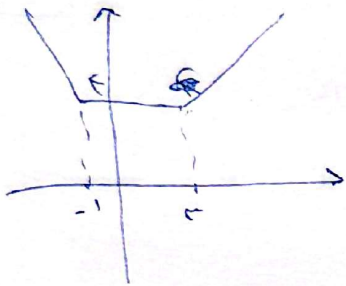
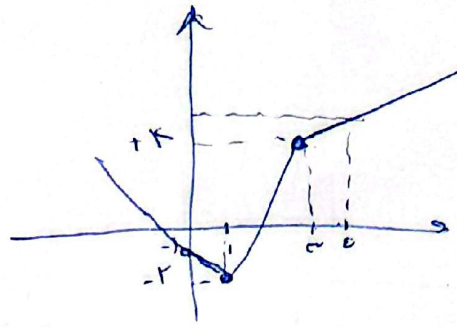
$$R_f: y \geq -2$$



1	1	3	2
-1	-2	2	1

الف - 4

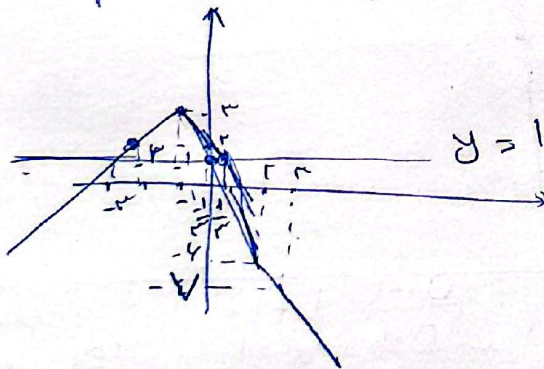
$$R_f = [-2, +\infty)$$



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

-2	-1	2	3
-2	-1	-4	-1

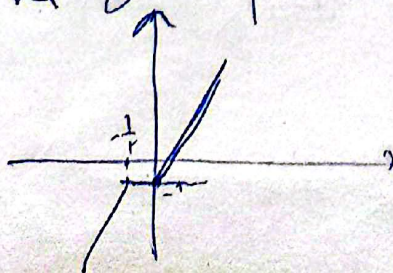
- 4



~~$$R_f = (-\infty, 2]$$~~

$$(-\infty, -2] \cup [\frac{1}{2}, +\infty)$$

$x_n - (x_{n+1}) - x$ $= x_n + 1$ $1 - \frac{1}{2}$ $1 - 1$	$x_n - (x_{n+1}) - x$ $= -1$	$x_n - (x_{n+1}) + x$ $= x_n - 1$ $1 - 1$
--	---------------------------------	---



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

$$f(x) = \frac{(x - \frac{1}{x})^r}{(x - \frac{1}{x})^r + \frac{1}{x}} \quad \text{ع} = \frac{\boxed{x - \frac{1}{x}}}{1 + \frac{1}{x}} \quad \begin{cases} \boxed{x} = 0 \rightarrow \frac{0}{1} = 0 \\ \boxed{x} = +\infty \rightarrow \frac{+\infty}{+\infty} = 1 \end{cases}$$

[0, 1)

ع - الف :

$$-\infty \leq -(x-1)^r \leq 0 \rightarrow -\infty \leq \sqrt{-(x-1)^r + r} \leq r$$

$$0 \leq \sqrt{-(x-1)^r + r} \leq r$$

$$y = \sqrt{-(x^r + \frac{1}{x} - 1)} \quad \text{ع} \mid \frac{1}{x} \quad R_f = (-\infty, +\infty]$$

$$R_y = [0, \sqrt{r}]$$

ع - ب :

$$S \mid \frac{1}{x} \quad R_f = [-1, +\infty)$$

$$R_y = [-1, +\infty)$$

$$g(x) = \log(x^r - x + 1) \quad \text{ع} \mid \frac{1}{x}$$

$$R_f = (-\infty, +\infty) \quad (0) - (1)$$

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

$$f(x) = a \cdot x + \frac{1}{x}$$


ع $a > 0 \rightarrow R_f = [1, +\infty)$ ع $a < 0 \rightarrow R_f = (-\infty, -1]$

ع $a > 0 \rightarrow R_g = [1, +\infty)$ ع $a < 0 \rightarrow R_g = (-\infty, -1]$

$$[n] + [-n] \rightarrow \begin{cases} \rightarrow n \text{ و } 2 \\ \rightarrow n \text{ و } 2 \end{cases} \quad \text{ج - 9}$$

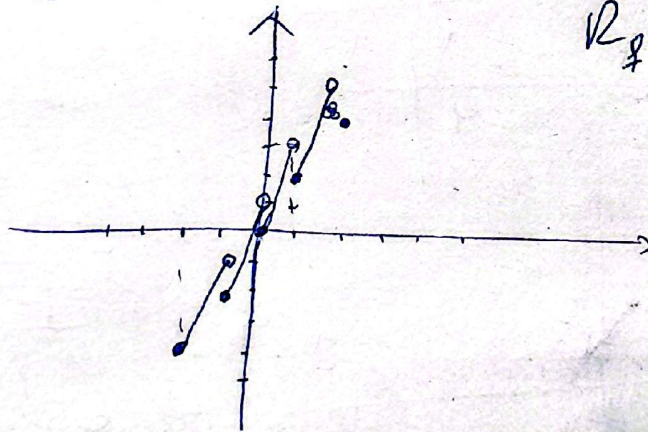
$$R_f = \{ \tau, \tau \}$$

$$\begin{aligned} -2 \leq x < -1 &\rightarrow \tau_{n+2} \\ -1 \leq x < 0 &\rightarrow \tau_{n+1} \\ 0 \leq x < 1 &\rightarrow \tau_n \\ 1 \leq x < 2 &\rightarrow \tau_{n-1} \\ x=2 &\rightarrow \tau_{n-2} \end{aligned}$$

$$\begin{aligned} & \begin{matrix} \tau \\ -\varepsilon \\ -1 \\ -1 \\ -1 \\ 0 \\ 1 \\ 2 \\ \varepsilon \end{matrix} \quad \begin{matrix} \tau \\ -1 \\ 0 \\ 1 \\ 2 \\ \omega \end{matrix} \end{aligned}$$

ج - 9

$$R_f = [-\varepsilon, \omega)$$



$$y = \sin^2 - \square + 1 \rightarrow \begin{cases} D=1 \rightarrow 1+1+1=3 \\ D=1 \rightarrow 1-1+1=1 \\ D=\frac{1}{2} \rightarrow \frac{1}{2} - \frac{1}{2} + \frac{1}{2} = \frac{1}{2} \end{cases} \quad \text{ج - 10}$$

$$R_f \left[\frac{1}{2}, 3 \right)$$

$$f(x) = \sin^2 + \square + 1 \rightarrow \begin{cases} D=1 \rightarrow 1 \\ D=1 \rightarrow 1 \\ D=\frac{1}{2} \rightarrow \frac{1}{2} \end{cases} \quad \text{ج - 10}$$

$$R_f = [1, 3)$$