

سنام حنا

ایان معاریان پلازم

SUBJECT

Year: Month: Day:

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الف) $y = x^3 - 3x^2 + 3x = (x-1)^3 + 1 \rightarrow y-1 = (x-1)^3 \rightarrow x = \sqrt[3]{y-1} + 1 \rightarrow R_f = \mathbb{R}$ (1)

ب) $yx^2 - 2y^2 = 1 \rightarrow x = \frac{2y \pm \sqrt{4y^2 + 4y}}{2y} \rightarrow 4y^2 + 4y \geq 0 \rightarrow y \geq 0 \rightarrow R_f = \mathbb{R} - (-1, 0)$

الف) $\frac{b}{1a} = \frac{f}{p} = 2 \xrightarrow{x=2} y = 9 \xrightarrow{a > 0} R_f = [9, +\infty)$ (2)

ب) $\frac{b}{1a} = \frac{-f}{-p} = 3 \xrightarrow{x=3} y = 12 \xrightarrow{a < 0} R_f = (-\infty, 12]$

ج) $\frac{b}{1a} = \frac{f}{p} = 2 \xrightarrow{x=2} y = -1 \xrightarrow{a > 0} R_f = [-1, +\infty) \rightarrow R_f = [0, +\infty)$

د) $\frac{b}{1a} = \frac{-f}{-p} = 3 \xrightarrow{x=3} y = 9 \xrightarrow{a < 0} R_f = (-\infty, 9] \rightarrow R_f = [0, 3]$

الف) $R_f = \mathbb{R}$ ب) $R_f = \mathbb{R}$ ج) $R_f = \mathbb{R} = [0, +\infty)$ د) $y = T \rightarrow R_f = [0, +\infty)$ (3)

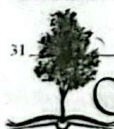
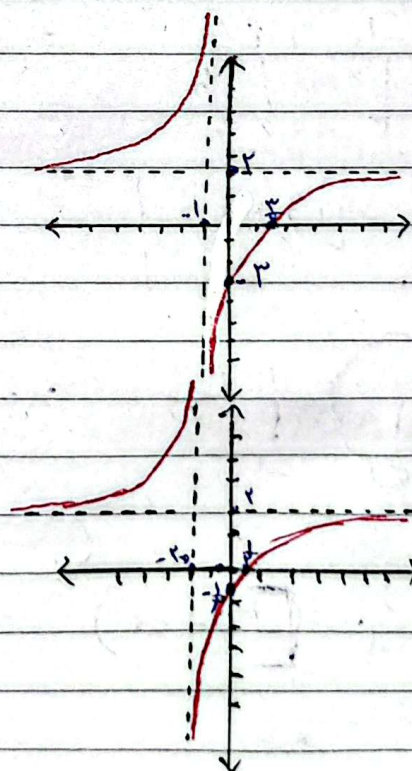
الف) $ad \neq bc \rightarrow$ همگرا شود $\rightarrow R_f = \mathbb{R} - \{3\}$ ب) $ad \neq bc \rightarrow$ همگرا نشود $\rightarrow R_f = \mathbb{R} - \{3\}$ (4)

الف) $ad \neq bc \rightarrow$ عبارت اول را با 1 و 2 $\rightarrow R_f = [0, +\infty)$ ب) $ad \neq bc \rightarrow$ عبارت اول را با 1 و 2 $\rightarrow R_f = [0, +\infty)$ (5)

$\frac{a}{c} =$ معادله اصلی و $\frac{a}{c} =$ معادله فرعی: در جواب همگرا شود

الف) $ad \neq bc$ و $\frac{a}{c} = 2$ و $\frac{a}{c} = -1$ (6)

ب) $ad \neq bc$ و $\frac{a}{c} = 2$ و $\frac{a}{c} = -2$ (7)



Senobar

الف) $R_f = (-\infty, -1] \cup [1, +\infty)$ $\rightarrow R_f = (-\infty, -1] \cup [1, +\infty)$

ب) $\sqrt{x} + \frac{1}{\sqrt{x}} \rightarrow R_f = (-\infty, -1] \cup [1, +\infty)$ $\rightarrow R_f = [1, +\infty)$

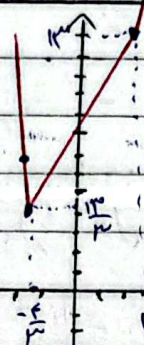
الف) $x^2 + \frac{1}{x^2} \rightarrow R_f = [1, +\infty)$ $\rightarrow R_f = [1, +\infty)$

ب) $\frac{x^2 + 1}{\sqrt{x^2 + 1}} = \sqrt{x^2 + 1} + \frac{1}{\sqrt{x^2 + 1}} \rightarrow R_f = [\frac{2}{\sqrt{2}}, +\infty)$

$$\begin{array}{c|c|c} -\frac{f}{x} & x & f \\ \hline -\frac{1}{x-1} & x+1 & f+1 \\ \hline \frac{1}{x} = \frac{1}{x} & 1 & 1 \end{array}$$

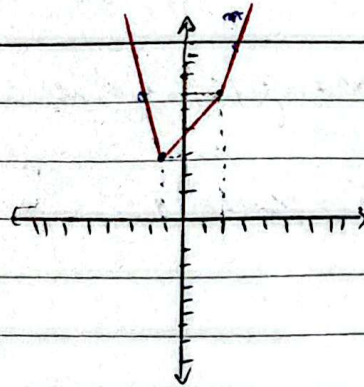
$$x=f \rightarrow y=1$$

$$x=-f \rightarrow y=1$$



الف) $\frac{-1}{x} \rightarrow R_f = [1, +\infty)$ $\rightarrow R_f = [1, +\infty)$

$R_f = [1, +\infty)$



ب) $\frac{-1}{x} \rightarrow R_f = [1, +\infty)$ $\rightarrow R_f = [1, +\infty)$

$R_f = [1, +\infty)$

