

19, 25 آفرین

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$$x \neq 0$$

$$x \neq 1$$

(1)

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

$$\begin{array}{c|c|c|c} 0 & \frac{1}{x} & 1 & \\ \hline + & - & + & - \end{array}$$

$\mathbb{R}$

و نیز

$$\frac{1-2x}{x(x-1)}$$

$$x = \frac{1}{2}$$

$$\frac{1-2x}{x(x-1)}$$

$$D_f = (-\infty, 0) \cup \left[\frac{1}{2}, 1\right)$$

$$-1) \quad x \neq -1 \quad x \neq 1$$

$$x \neq 0 \quad x \neq -2$$

$$x(x+2) + x - 1 \neq 0$$

$$x^2 + 3x - 1 \neq 0$$

$$D_f = \mathbb{R} - \left\{ -1, 0, 2, -\frac{3}{2} \right\}$$

$$x \neq 0$$

$$x \neq 2$$

$$x \neq -\frac{3}{2}$$

$$\frac{1}{\mu} = q$$

$$x = -1$$

$$\begin{array}{c} -1 \quad 1, \omega \\ + \quad - \quad + \end{array}$$

$$\mu = \frac{1}{x} = x^{-1}$$

$$\mu x = \omega$$

$$x = \frac{1}{\omega}$$

$$D_f = (-\infty, \frac{1}{\omega}] \cup [\frac{1}{\omega}, +\infty)$$

1)

$$x - 1 \geq 0$$

$$x \geq 1$$

$$D_f = [1, \frac{1}{\omega}]$$

$$\mu - \sqrt{n-1} \geq 0$$

$$\mu \geq \sqrt{n-1}$$

$$\begin{array}{c} \mu \geq \sqrt{n-1} \\ \mu \geq x \end{array}$$

$|\mu$

$$x^2 - x - 1 > 0$$

$$1 - x(-1) > 0$$

$$x^2 - 1 > 0$$

$$(x-1)(x+1) > 0$$

$$\begin{array}{c} x = 1 \\ x = -1 \end{array}$$

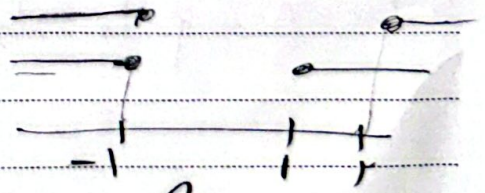
$$\begin{array}{c} -1 \quad 1 \\ + \quad - \quad + \end{array}$$

$$x^2 - 1 \geq 0$$

$$x^2 \geq 1$$

$$x \geq 1$$

$$x \leq -1$$



$$D_f = (-\infty, -1) \cup [\frac{1}{\omega}, +\infty)$$

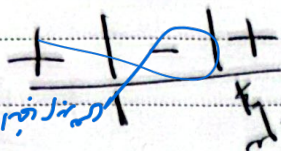
$$(-\infty, -1) \cup (\frac{1}{\omega}, +\infty)$$

عبارت جبری و مثبت است نه نامتناهی!

$$D \neq (-\infty, -1] \cup [1, +\infty)$$

Def. 1.1

Def. 1.1



Def. 1.1

$$x = -1$$

$$x = 1$$

$$x = 1$$

$$x = 1$$

$$f(x) = x$$

$$x = 1$$

$$1/2$$

$$1/2$$

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

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

$$= (1-a)(1+a)$$

$$x = \frac{1}{1-x}$$

$$x = \frac{1}{1-x}$$

$$x = \frac{1}{1-x}$$

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

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

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

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

$$1/2$$

$$f\left(\frac{\sqrt{p}}{p} + \frac{1}{p}\right) = f\left(\frac{\sqrt{p} + 1}{p}\right)$$

(4)

$$f(x) = (x-1) \left(\frac{1}{x} + \frac{1}{x} - \frac{2}{x} \right)$$

$$f_n - f_{n-1} = (n-1) - p$$

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

(V)

$$f\left(\frac{a+1}{a-1}\right) = a$$

$$\Rightarrow \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} =$$

$$\frac{a+1+a-1}{a-1}$$

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

$$R - \{1\}$$

11

$$f(t) = -r$$

$$-r = x^r - \varepsilon u$$

$$x^r - \varepsilon u + \varepsilon = 0$$

$$(x - r) = 0$$

$$x = r$$

$$\sqrt{x^r - 1} = r$$

$$x^r - 1 = \varepsilon$$

$$x^r = 0$$

$$x = \pm \sqrt{\omega}$$

$$b = r$$

19

$$x = 1$$

$$f(x) = 1 - \varepsilon + q = r$$

$$p x = -q$$

$$f(-p) = p q + p + q = r$$

$$\sqrt{r \times r} = \frac{r}{1+r}$$

$$r \cos x + \omega \cos x = r, \omega$$

$$r \cos x + \omega \cos x - r, \omega = 0$$

$$r \cos x + \omega \cos x - 1 \varepsilon = 0$$

$$(r \cos - r) (r \cos + \omega) = 0$$

$$\Rightarrow x = 90^\circ$$

$$\tan 90^\circ = \infty$$

$$۳- \log_{\epsilon} x^2 - x - 2 \rightarrow x^2 - x - 2 > 0 \rightarrow (x-2)(x+1) > 0 \quad \frac{-1 \pm 2}{+0-0+} \rightarrow x > 2 \leq x < -1 \quad I$$

$$\sqrt{x^2-1} + 1 \rightarrow \text{عوارض مثبت است} \rightarrow \sqrt{x^2-1} \rightarrow x^2-1 \geq 0 \rightarrow x \geq 1 \leq x \leq -1 \quad II$$

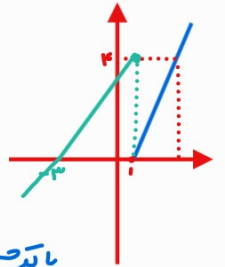
$$I, II \rightarrow x < -1, x > 2 \rightarrow D_f = (-\infty, -1) \cup (2, +\infty)$$

$$f(x) - x = \begin{cases} x^2 - 2 - x & x \geq 1 \\ x^2 + 3 - x & x < 1 \end{cases} = \begin{cases} x^2 - 2 & x \geq 1 \\ x + 3 & x < 1 \end{cases}$$

$$f(x) - x \geq 0 \rightarrow \begin{cases} x^2 - 2 \geq 0 \rightarrow x \geq 1 \checkmark \\ x + 3 \geq 0 \xrightarrow{x < 1} -3 \leq x < 1 \checkmark \end{cases}$$

$$\rightarrow D_f = [-3, +\infty)$$

باینجه به پس نیز مشخص است!



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