

۱۸، ۲۵ بابت باشند

الف) $f(x) = \left\{ \left(\frac{1}{x}, x \right), \left(\frac{x}{x-1}, x-1 \right), \left(x, x \right), \left(-\frac{1}{x}, x \right) \right\}$ (۱)

ب) $f(x) = \left\{ \left(\pm 1, x \right), \left(\pm \sqrt{x}, x-1 \right), \left(\pm x, x \right) \right\}$

$x^2=1 \rightarrow x=\pm 1$ $x^2=x \rightarrow x=\pm \sqrt{x}$ $x^2=x \rightarrow x=\pm x$

ج) $g(x)+1 = \left\{ \left(-x, x \right), \left(1, x \right), \left(x, x \right), \left(-1, x \right) \right\}$

د) $\frac{f}{g} = \left\{ \left(1, x \right), \left(x, x-1 \right) \right\}$

$\left\{ \left(x, x \right), \left(x, x \right), \left(-x, x \right) \right\}$

ع) $= 0 \times 1 = 0$

الف) $f(x) = \sqrt{x+1} \sqrt{x-1} + x-1$ (۱)

$f(x) = \sqrt{x-1} + x$

$g(x) = \sqrt{x-1} - x$

$x \sqrt{x-1}$ $a = -$ $b = x$

$\frac{a+b}{c} = \frac{1}{x}$ (۲)

$D = \left\{ x, 1 \right\}$

$\left(x, \frac{1}{x} \right)$ و $\left(0, \frac{x}{x-1} \right)$

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$\frac{g}{f} = \left\{ \left(x, -\frac{1}{x} \right), \left(0, x \right) \right\}$

دقت

$D_f = \mathbb{R} - \{1, x\}$ $(x^2 - x + x \neq 0 \rightarrow x \neq 1, x)$

$D_f \cap D_g = \left\{ x, 0 \right\} \rightarrow \frac{g}{f} = \left\{ \left(x, -\frac{1}{x} \right), \left(0, x \right) \right\}$

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$$f(n) = \frac{\sqrt{n-n}}{n-r}$$

$$\sqrt{n-n} \rightarrow n \leq n$$

$$n-r \neq 0 \rightarrow n \neq r$$

Mo Tu We Th Fr Sa Su

$$u_s = \frac{r}{r} = r \quad R = [r, +\infty) \quad (1)$$

$$\varepsilon - 1 + 1 = 1$$

ب)

$$m_s = \frac{y}{r} = r$$

$$-4 + 1 + r = 1r$$

$$[-\infty, 1r]$$

ج)

$$u_s = \frac{y}{r} = r$$

$$y \cdot \varepsilon - 1 - r = -v$$

$$R = [r_0, +\infty)$$

د)

$$k + \frac{y}{r} = r$$

$$k = 9 = 9$$

$$R = [r, +\infty)$$

(9)

هـ)

$$R = IR$$

$$R = IR$$

$$R = [r, +\infty)$$

$$R = [r, +\infty)$$

$$R_g = \{ \dots, -1 \}$$

$$D_g = IR$$

$$D_g = IR - \{r\}$$

$$D\left(\frac{f}{g}\right) = \frac{f}{g} \quad \left\{ \dots, -1, 0, 1, 2, 3 \right\}$$

$$R = \sqrt{-n^2 + 4n}$$

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

$$\{(1,0), (r,1), (r,0)\}$$

$$\frac{f(r)}{g(r)} = \sqrt{1-1-1} = \sqrt{r} \rightarrow \frac{f(r)}{g(r)} = \frac{\sqrt{r}}{r}$$

$$g(r) = r$$

$$y = n^2 - r n^2 + r n - 1$$

$$y \leq (n-1)^2 + 1$$

$$\sqrt{y} = 1 \rightarrow 1 = n$$

$$y = 1 \in IR$$

$$R = y \in R$$

$$y = 0 \rightarrow 0 - 0 = 1 \times$$

$$y = n^2 - r n^2 + r n - 1$$

$$y n^2 - r y n - 1 = 0$$

$$e y^2 + e y - 1 = 0$$

$$y(y+1) = \frac{1}{1-r}$$

$$R = IR - (-1, \dots)$$

PASARGAD

لے باغرض ۰ ≠ ۱ عبارت ۱ (۲) فرض کریں !

Subject:

Date:

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u) IR - {r}

u)

u) IR - {r}

1

2

3

4

5

6

7

8

9

$$f(n) = \left\{ \left(\frac{1}{r}, 2\right) \left(\frac{r}{r}, -1\right) (2, 2) \left(-\frac{1}{r}, 4\right) \right\} \quad n \text{ های } f \text{ باید حقیق برابر باشند!} \quad (3)$$

$$f(n) = \left\{ (1, 2) (-1, 2) (\sqrt{3}, -1) (-\sqrt{3}, -1) (2, 2) (-2, 2) \right\} \quad \text{هرگاه } n \text{ های } f \text{ را برابر } n^2 \text{ قرار دهیم!}$$

$$g(n)+1 = \left\{ (-2, 19) (1, 3) (3, 9) (-1, 1) \right\} \quad \text{این عمل روی } n \text{ های } g \text{ اعمال می‌شود!}$$

$$\frac{f}{g} = \left\{ (1, \frac{2 \times 2}{-1}) (3, \frac{2 \times -1}{r}) (-1, \frac{2 \times 4}{-}) \right\} = \left\{ (1, -2) (3, -1) \right\}$$

$$f(n) = \frac{\sqrt{\sqrt{3n} - n}}{n - 2} \rightarrow \begin{cases} n \neq 2 \\ n > 0 \end{cases} (\sqrt{3n}) \rightarrow Df = [0, 3] - \{2\} \quad (5)$$

$$\begin{cases} \sqrt{3n} - n > 0 \rightarrow 3n \geq n^2 \rightarrow 0 \leq n \leq 3 \end{cases}$$

$$g(n)+1 \neq 0 \rightarrow g(n) \neq -1 \rightarrow [n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z}$$

$$D \frac{f}{g+1} = \left\{ Df \cap Dg, g(n) \neq -1 \right\} = \left\{ 0, 1, 3 \right\}$$

$[0, 3] - \{2\} \cap \mathbb{Z}$

$$Df \rightarrow 3n - n^2 - 2 > 0 \rightarrow n^2 - 3n + 2 < 0 \rightarrow 1 \leq n \leq 2 \quad (6)$$

$$Df \cap Dg = \{1, 2, 3\}$$

$$\frac{f}{g} = h = \left\{ (1, 0) (2, \sqrt{\frac{2}{r}}) (3, 0) \right\}$$

(الف) $y = n^3 - 3n^2 + 2n - 1 + 1 = y = (n-1)^3 + 1$ (۷)

$$y-1 = (n-1)^3 \rightarrow \sqrt[3]{y-1} = n-1 \rightarrow n = \sqrt[3]{y-1} + 1$$

$R_f = \mathbb{R}$

(ب) $y = \frac{1}{n^2 - 2n} \rightarrow n^2 y - 2ny = 1 \rightarrow n^2 y - 2ny - 1 = 0$

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

$y = 0 \rightarrow 0 = 1 \times$ صفتی وجود ندارد! $\rightarrow R_f = (-\infty, -1] \cup (0, +\infty)$