

$$F(x^r + 2x) = 2x^r - 1$$

$$F(r) + F(0) = 1 + V = \Lambda$$

جواب

$$x^r + x = 1 \rightarrow x = 1 \rightarrow F(r) = 1 - 1 = 0$$

$$x^r + x = 0 \rightarrow x = 0 \rightarrow F(0) = 1 - 0 = 1$$

5

$$F(x) = x^r - 9x^r + 12x$$

$$(x-r)^r = x^r - 9x^r + 12x - \Lambda \rightarrow F(x) = (x-r)^r + \Lambda \rightarrow (\sqrt{r} + r-r)^r = 1 + \Lambda = 10$$

$$g(x) = x^r + 9x^r + 12x$$

$$(x+r)^r = x^r + 9x^r + 12x + 2V - g(x) = (x+r)^r - 2V \rightarrow (\sqrt{r} - r + r)^r = V - 2V = -V$$

جواب -2

5

$$f(x) = \sqrt{x+1} \sqrt{x-1} \quad g(x) = \sqrt{x-1} \sqrt{x-1} \quad F(x) = g(x) + a + b\sqrt{x+c}$$

$$\left(\sqrt{\frac{x+1}{x+b}} + \sqrt{\frac{x-1}{x-b}} \right)^2 = x + f\sqrt{x-1} + x - 1\sqrt{x-1} + \frac{2\sqrt{x^2 - 14x + 49}}{0 \rightarrow 2x - 14} = 2x + 2\sqrt{x-1} - 14$$

$$\textcircled{1} \rightarrow \sqrt{x^2 - 14x + 49} = \sqrt{(x-7)^2} = |x-7|$$

$$\Rightarrow (F(x) + g(x))^2 = f(x-14) \xrightarrow{0 \rightarrow 2x-14} F(x) + g(x) = 2\sqrt{x-14} = a + b\sqrt{x+c} \Rightarrow \frac{a+b}{c} = \frac{0+2}{-14} = \left(-\frac{1}{7} \right)$$

جواب

$$f(x) = \frac{2x+2}{x^2-14x+49}$$

$$g(x) = f((2,1)(1,0)(3,5)(0,14))$$

$$\frac{g}{f} = ?$$

$$F(x) = \left\{ (1, -1) \right\} \quad \left(1, \frac{1}{2} \right) \quad \left(2, \frac{1}{2} \right) \quad \left(0, \frac{1}{2} \right)$$

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

جواب

$$f(x) = \{ (1, 2) (3, -1) (4, 2) (-1, 4) \} \quad g(x) = \{ (-2, 3) (1, -1) (3, 2) (-1, 0) \}$$

$$\text{الف) } f(x) \rightarrow 4 \text{ عضو دارد}$$

$$\rightarrow \left\{ \left(\frac{1}{2}, 2 \right) \left(\frac{3}{2}, -1 \right) (2, 2) \left(-\frac{1}{2}, 4 \right) \right\}$$

$$\text{ب) } 2g(x) + 1 \rightarrow 4 \text{ عضو دارد}$$

$$\rightarrow \left\{ (-2, 19) (1, 3) (3, 9) (-1, 1) \right\}$$

1,5

$$\text{ب) } f(x^r) \rightarrow 3 \text{ عضو دارد}$$

$$\rightarrow \left\{ (1, 2) (3, -1) (2, 2) \left(-\frac{1}{2}, 4 \right) \right\}$$

دانشی بر روی یکبار قرار می گیرد

$$\text{ب) } \frac{f}{g} \rightarrow 2 \text{ عضو دارد}$$

$$\rightarrow \left\{ (1, -4) (3, -1) \left(-\frac{1}{2}, 4 \right) \right\}$$

که خود در خارج کشور قرار می گیرد

14,8

مردم با مردم دختر A

نایب خانقاری / رشیدیان / نایف

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

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

$$y = \sqrt{x^x \left(\left(\frac{1}{x+1}\right)^{x+1} - 1\right)} = \sqrt{\frac{x^x}{x^{x+1}} - x^x} \Rightarrow \frac{x^x}{x^{x+1}} - x^x \geq 0 \Rightarrow \frac{1}{x} - x \geq 0$$

$$\rightarrow \frac{1}{x} - x \geq 0 \rightarrow \frac{1}{x} \geq x \rightarrow \frac{1}{x^2} \geq 1 \rightarrow x^2 \leq 1 \rightarrow x \in [-1, 1]$$

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

$$f(-x)$$

$$f(-x) = \sqrt{-x + |-x+1|} \rightarrow -x + |-x+1| \geq 0 \rightarrow \begin{cases} x \leq 1 \\ x \geq 1 \end{cases} \rightarrow \begin{cases} -x - x + 1 \geq 0 \rightarrow x \leq \frac{1}{2} \\ -x - x + 1 \geq 0 \rightarrow x \leq \frac{1}{2} \end{cases}$$

$$D_{f(-x)} = (-\infty, \frac{1}{2}]$$

$$y = \sqrt{\frac{x-1}{f(x)}} \rightarrow \frac{x-1}{f(x)} \geq 0 \rightarrow \frac{x-1}{x^2+x+1} \geq 0 \rightarrow D = (-1, 1] \cup (2, 3)$$

$$y = \frac{1}{9x^2 - 4x^2 - 8x - 3}$$

$$y = \frac{1}{3x^2 + ax + b}$$

$$y = \sqrt{a+b} \rightarrow \sqrt{a+b} = \sqrt{2}$$

$$\textcircled{1} 9x^2 - 4x^2 - 8x - 3 = 0$$

$$\textcircled{2} 9x^2 - 4x^2 = (3x^2 - 4)(3x^2 + 4)$$

$$\textcircled{3} (3x^2 - 4)(3x^2 + 4) = 0$$

$$\textcircled{4} 9x^2 + (3x^2 + 4x - 1)x^2 + (-2 + 4)x + 4 = 9x^2 - 4x^2 - 8x - 3$$

$$\textcircled{5} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{16 + 12}}{6} = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{6} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{7} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{8} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

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$$\textcircled{15} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{16} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{17} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$\textcircled{18} 3x^2 + 4x - 1 = 0 \rightarrow x = \frac{-4 \pm \sqrt{28}}{6}$$

$$f(x) = x^x + x$$

$$y = \sqrt{f(x) - f\left(\frac{x}{2}\right)}$$

$$y = \sqrt{x^x + x - \frac{x^x}{2} - \frac{x}{2}} \rightarrow \frac{x^x}{2} + \frac{x}{2} \geq 0$$

$$\frac{x^x}{2} + \frac{x}{2} \geq 0 \rightarrow x^x + x \geq 0$$

$$D = [-1, 0) \cup [1, \infty)$$

$$\textcircled{1} x^x = t \rightarrow t^t = t^t \rightarrow t^t = t^t$$

$$\textcircled{2} (t-1)(t^t - t^t + 1) = t^t(t-1)$$

$$\textcircled{3} (t-1)(t^t - t^t + 1) = t^t(t-1)$$

$$\textcircled{4} (t-1)(t^t - t^t + 1) = t^t(t-1)$$

$$\textcircled{5} t^t - t^t + 1 = 0 \rightarrow t^t = t^t$$

$$\textcircled{6} t^t - t^t + 1 = 0 \rightarrow t^t = t^t$$

$$\textcircled{7} t^t - t^t + 1 = 0 \rightarrow t^t = t^t$$

$$\text{ب ۱۰) } \left\{ \begin{array}{l} a^r = 1 \rightarrow a = \pm 1 \\ a^r = r \rightarrow a = \pm r \\ a^r = r \rightarrow a = \pm r \\ a^r = -1 \rightarrow X \end{array} \right. \rightarrow \left\{ (\pm 1, r) (\pm \sqrt{r}, -1) (\pm r, r) \right\}$$