

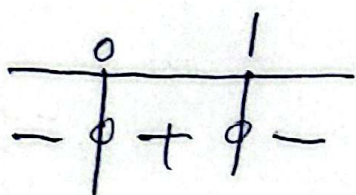
شماره ۱۷

تاریخ: A

آیند اسلامی

$$f(x+1) = \left(\frac{1}{y}\right)^{x-1} - 1 = 0 \rightarrow \left(\frac{1}{y}\right)^x = 1 \rightarrow x = 1$$

۱- (۲)



$$D_f = [0, 1] \checkmark$$

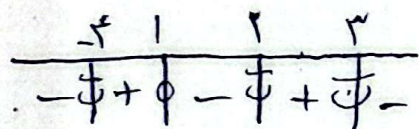
$$f(-x) = \sqrt{-x + |-x+2|}$$

۲- با دقت تدبیر

(۱, ۵)

$$\begin{cases} -2x+2 > 0 & x < 1 \rightarrow x < 1 \\ -x & x = 2x \\ -2 > 0 & x > 2 \end{cases}$$

$$D_f = (-\infty, 1] \cup (2, +\infty)$$



$$D_f = (-5, 1] \cup (2, 3) \checkmark$$

۳- (۲)

$$x(9x^2 - 7x - 4) = 0$$

$$9x^2 - 7x - 4 = (3x^2 - x - 4)(3x^2 + x + 1)$$

$$\begin{matrix} \downarrow & \downarrow \\ -1 & -4 \\ a & b \end{matrix}$$

$$\sqrt{-(-4)} = 2 \checkmark$$

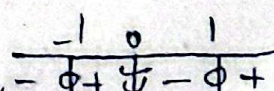
۴- (۲)

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

۵- (۰)

$$\sqrt{a - \frac{1}{a}} \rightarrow \sqrt{\frac{a^2 - 1}{a}}$$

$$\frac{x}{x} \frac{1+x^2}{x^2} \rightarrow \frac{x^2 + 1}{x^2}$$



$$\sqrt{\frac{(a+1)(a-1)}{a}}$$

$$\begin{matrix} a = -1 \rightarrow x = -1 \\ a = 1 \rightarrow x = 1 \\ a = 0 \rightarrow x = 0 \end{matrix}$$

$$D_f = [-1, 0) \cup [1, +\infty)$$

معادله؟

$$f(1) = 2(1^2 - 1) = 1$$

$$x^2 + x = 2 \rightarrow x = 1$$

$$f(0) = 2(0^2 - 1) = -2$$

$$x^2 + x = 0 \rightarrow x = 0$$

۶- (۲)

$$V+1 = 1 \checkmark$$

$$g(x) = (x+3)^3 - 2V \rightarrow (\sqrt[3]{2V})^3 - 2V = -2_0 \rightarrow \frac{-2_0}{1_0} = -2 \quad \textcircled{2} - V$$

$$f(x) = (x-2)^3 + 1 \rightarrow (\sqrt[3]{1})^3 + 1 = 1_0 \rightarrow \frac{1_0}{1_0} = 1 \quad \textcircled{2} - V$$

$$f(x) = \sqrt{(\sqrt{x-4} + 2)^2} \quad \left. \begin{array}{l} g(x) = \sqrt{(\sqrt{x-4} - 2)^2} \end{array} \right\} \oplus \sqrt{x-4} \quad \begin{array}{l} a=0 \\ b=2 \\ c=-4 \end{array} \quad \frac{2}{-4} = -\frac{1}{2} \quad \textcircled{2} - 1$$

$$f(x) = \left\{ (2, -4), (1, \frac{1}{2}), (3, \frac{1}{2}), (0, \frac{2}{3}) \right\} \quad \frac{f}{g} \quad \textcircled{2} - 9$$

$$\frac{f(g)}{f(f)} = \left\{ (2, -\frac{1}{2}), (0, 4) \right\} \quad \checkmark$$

$$f(x^2) = \left\{ (\frac{1}{4}, 2), (\frac{9}{4}, -1), (2, 2), (-\frac{1}{4}, 4) \right\} \quad \checkmark \quad \textcircled{15} (1_0)$$

$$f(x^2) = \left\{ (1, 2), (3, -1), (2, 2), (4, 4) \right\} \quad \text{ریشه دوم باید بیاید} \quad \checkmark$$

$$2g^2(x) + 1 = \left\{ (-2, 18), (1, 2), (3, 8), (-1, 0) \right\}$$

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

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

$$\frac{2f(x)}{g(x)} = \left\{ (1, -4), (3, -1) \right\} \quad \checkmark$$