

$$x^x + (x+1) \geq 0 \quad \left(\frac{1}{x}\right)^{x-1} - 1 = 0 \quad \underline{17}$$

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

$$x + |x+2| \geq 0$$

$$(-\infty, 1]$$

$$(1, 1.75)$$

$$|x+2| \geq -x$$

$$D_{f(-x)} = [1, +\infty)$$

$$x+2 \geq -x \quad x \geq -1 \quad \checkmark$$

$$\rightarrow -x \leq 1$$

$$x+2 \leq x$$

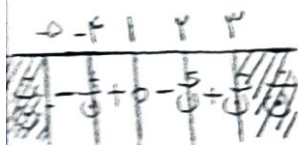
$$2 \leq 0 \quad \times$$

وقتی که مقعر ضد ب
میترجه به عکس میسه

$$\frac{x-1}{f(x)} \geq 0$$

$$D_f = (-4, 1] \cup (2, \infty) \quad \checkmark$$

$$2$$



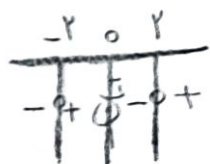
$$0 \text{ یا بیشتر ...}$$

$$y = \sqrt{x^x + x - \frac{4x}{x^x} - \frac{x}{x}} = \sqrt{\left(x - \frac{x}{x}\right)\left(x^x + \frac{17}{x^x} + 4\right) + 1 - \frac{x}{x}} = \sqrt{\left(x - \frac{x}{x}\right)\left(x^x + \frac{17}{x^x} + 4\right)}$$

$$2$$

$$x - \frac{x}{x} \geq 0$$

$$\frac{x^x - x}{x} \geq 0$$



$$D_f = [-2, 0) \cup [2, +\infty) \quad \checkmark$$

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

$$x^x + x = 10 \quad x=2$$

$$f(2) + f(10) = 2 - 1 + 10 - 1 = 11 \quad \checkmark$$

$$2$$

$$f(x) = (x-2)^x + 11$$

$$g(x) = (x+2)^x - 22$$

$$\frac{g(\sqrt{2} - 2)}{f(\sqrt{2} + 2)} = \frac{(\sqrt{2} - 2 + 2)^2 - 22}{(\sqrt{2} + 2 - 2)^2 + 11} = \frac{-20}{10} = -2 \quad \checkmark$$

$$2$$

$$\sqrt{(\sqrt{x-2} - 2)^2} = g(x) = |\sqrt{x-2} - 2|$$

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

$$x \geq 11 \Rightarrow g(x) + f(x) = \sqrt{x-2} - 2 + \sqrt{x-2} + 2 = 2\sqrt{x-2} + 0 \quad a=0 \quad b=2 \quad c=-2 \quad \frac{a+b}{c} = \frac{1}{-2}$$

$$x \geq 4 \Rightarrow g(x) + f(x) = 2 - \sqrt{x-2} + \sqrt{x-2} + 2 = 4 \quad a=2 \quad b=0 \quad c \in \mathbb{R} \rightarrow \text{معلوم}$$

این حالت کلاً غلطه

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

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$$g(1) = 1$$

$$f(1) = \frac{1}{1+1+1} \Rightarrow \text{تعریف نمی شود}$$

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

$$f(1) = \frac{1}{1-1+1} \Rightarrow \text{تعریف نمی شود}$$

$$\frac{g(1)}{f(1)} = \frac{1}{1} \text{ وقت!}$$

$$f(0) = \frac{1}{1} \quad g(0) = \frac{1}{1} = 1$$

$$g(0) = 1$$

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

$$ب) f(x^2) = \left\{ (1, 1), (\sqrt{2}, -1), (2, 1) \right\}, (-1, 1), (-\sqrt{2}, -1), (-2, 1) \}$$

باید ریشه گرفت
بسیاری!

$$ج) 2g^2(x) + 1 = \left\{ (-2, 19), (1, 3), (3, 9), (-1, 1) \right\}$$

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