

11

مستأش عزمي زاده

1 $12a - 20 \leq a^2 - 4 \Rightarrow a^2 - 12a + 14 \geq 0$

2 $(a+4)(a-2)^2 \geq 0$

3 $\text{ج. ٢} \quad [-4, +\infty)$

4

5 $f(x) = 2$

6 $12 + u = 2 \Rightarrow u = -10$

7 $f(x) = 2(3x - 10) - 10 = 6x - 30$

8 $f^{-1}(x) : \frac{ay + 10}{y - 1} = x \Rightarrow y = -\frac{-x - 10}{x - a}$

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$$g^{-1} = \{(1,2), (3,4), (5,6)\}$$

(5)

$$\text{Log } g^{-1} = \{(1,4), (3,8), (5,0)\}$$

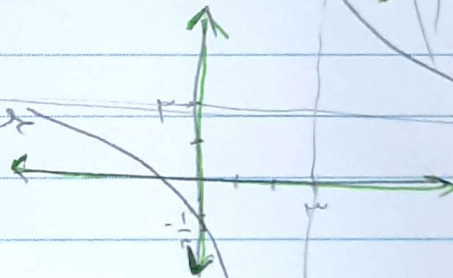
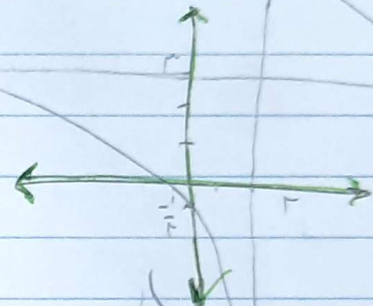
"مخرج غلط"

$$(1, \frac{2}{3}) (3, \frac{4}{3})$$

دکوس بدتر است. بدتر است

$$\frac{3y+1}{y-2} = x \Rightarrow y = -\frac{-2x-1}{x-3}$$

$$y = \frac{2x+1}{x-3}$$

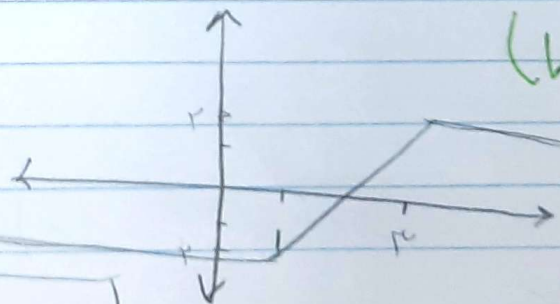


$$[a, b] \rightsquigarrow [1, 3]$$

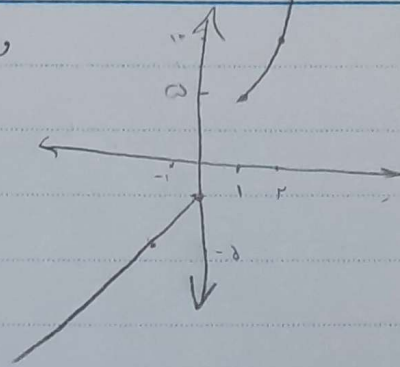
$$x-1 + x-3 = 2x-4$$

"ضابطه ی خود تابع"

$$x = 2y - 4 \Rightarrow y = \frac{1}{2}x + 2$$



دارون پذیر است چون یک به یک است



$$y^2 + 4 = x$$

$$y = \sqrt{x-4} \quad x \geq 4$$

$$y = \frac{1}{x}x + \frac{1}{x} \quad x \leq -1$$

$$xy - 1 = x$$

$$R_f = D_{f^{-1}}$$

$$x = y^2 - \frac{(y+1)^2}{y+1} \Rightarrow \frac{y^2 + y - y^2 - 2y - 1}{y+1} = x \quad (9)$$

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

$$y = \left(\frac{-x-1}{x+1} \right) \times \frac{x}{x} \Rightarrow a = -1, b = -1, d = 1$$

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

(در این مثال ضابطه‌ی $f(x)$ و $f^{-1}(x)$ یکی است پس تقابلی ندارد در کنار هم قرار می‌دهیم)

$$y = \frac{x}{x^2+1} \xrightarrow[\text{ع.ت.}]{\text{دارون}} x = \frac{y}{y^2+1} \Rightarrow xy^2 + x - y = 0 \quad (10)$$

برای تعریف Δ با سطر $1-4x^2 \geq 0$

$$4x^2 \leq 1 \Rightarrow -\frac{1}{2} \leq x \leq \frac{1}{2}$$

$$y = \frac{1 \pm \sqrt{1-4x^2}}{2x}$$

$$f^{-1}(x) = \frac{1 \pm \sqrt{1-4x^2}}{2x} \quad \left[-\frac{1}{2}, \frac{1}{2}\right]$$

Arman