

آرین حاجی پور

-1

$$\begin{aligned}
 & x \rightarrow f(0) = 2|0| + 1 = 1 \\
 & x = 1 \rightarrow f(1) = 2|1| = 2 \\
 & x = -1 \rightarrow f(1) + f(f(1)) = 3 \\
 & x = 2 \rightarrow f(2) = 2|2| = 4 \\
 & x = -2 \rightarrow f(-2) = 2|2| = 4 \\
 & f(2) + f(f(2)) = 8 \\
 & f(-2) + f(f(-2)) = 8 \\
 & f(4) = 2|4| = 8 \\
 & f(-4) = 2|4| = 8 \\
 & f(8) = 2|8| = 16 \\
 & f(-8) = 2|8| = 16 \\
 & f(16) = 2|16| = 32 \\
 & f(-16) = 2|16| = 32 \\
 & \text{min}_{x \in \mathbb{R}} f(x) = 1
 \end{aligned}$$

$$f(x) = \frac{2|x| + 1 - f(-x)}{-x} \quad \text{و} \quad f(-x) = \frac{2|x| + 1 - f(x)}{x}$$

-2

$$\begin{aligned}
 & x \rightarrow f(x) = 2|x| + 1 \rightarrow f(1) = 3 \\
 & \Rightarrow f(x) = x^2 + 3x + 1 \\
 & \Rightarrow f(x^2) = x^4 + 3x^2 + 1
 \end{aligned}$$

-3

$$\begin{aligned}
 & y = \frac{x^2 + 1}{x-1} \rightarrow x^2 - y = x^2 + 1 - y(x-1) \\
 & \Rightarrow x^2 - y = x^2 + 1 - yx + y \Rightarrow -y = 1 - yx + y \Rightarrow yx - 2y = 1 \\
 & y(x-2) = 1 \Rightarrow y = \frac{1}{x-2} \\
 & \frac{1}{x-2} \geq \sqrt{(1-y)^2 - 1 - 4y} \Rightarrow 1 + y^2 - 2y - 1 - 4y \Rightarrow y^2 - 6y - 1 \geq 0 \\
 & (y-3)(y+1) \geq 0 \Rightarrow y \in (-\infty, -1] \cup [3, \infty) \\
 & \frac{1}{x-2} \geq -1 \Rightarrow \frac{1}{x-2} + 1 \geq 0 \Rightarrow \frac{1+x-2}{x-2} \geq 0 \Rightarrow \frac{x-1}{x-2} \geq 0 \\
 & \frac{x-1}{x-2} \geq 0 \Rightarrow x \in (-\infty, 1] \cup [2, \infty) \\
 & \frac{1}{x-2} \leq 3 \Rightarrow \frac{1}{x-2} - 3 \leq 0 \Rightarrow \frac{1-3x+6}{x-2} \leq 0 \Rightarrow \frac{-3x+7}{x-2} \leq 0 \\
 & \frac{-3x+7}{x-2} \leq 0 \Rightarrow x \in \left[\frac{7}{3}, 2\right) \cup (2, \infty)
 \end{aligned}$$

۱) در تابع $R \rightarrow \infty$ تا $\infty - \infty$ تا ∞ از حدی
چیز تولید می کند که عکسش روی داخل و سوال لیست دارد

$$\therefore \sqrt{x+1} \geq \frac{x}{x-1} \quad x = -\frac{1}{x}$$

$$\therefore x^k + \frac{1}{x^k} \rightarrow \min \rightarrow 0 \text{ as } \frac{1}{x} \rightarrow \left[\frac{1}{x}, \infty\right)$$

[illegible]

الف $\rightarrow$ (4 سوال) $\rightarrow \min = a, \max = +\infty \Rightarrow [a, +\infty)$

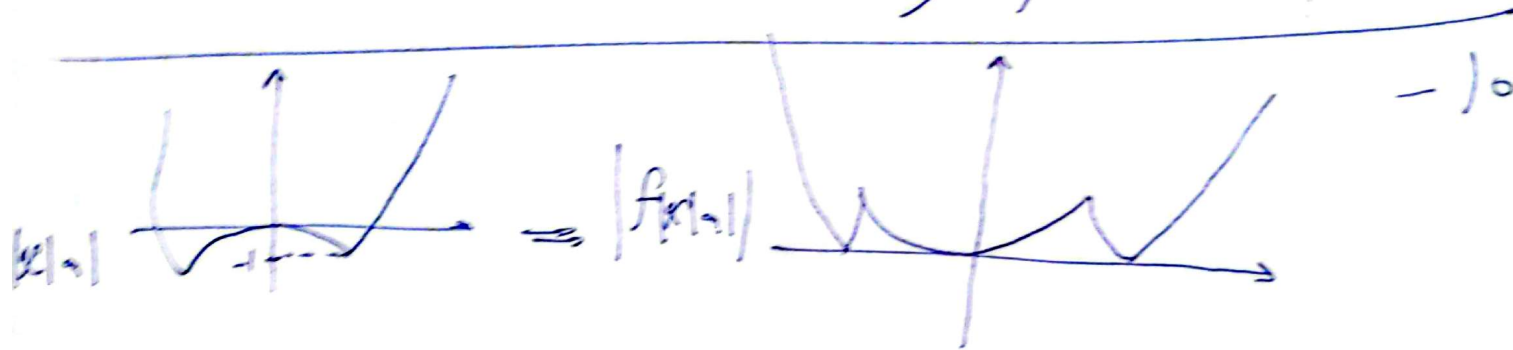
$\therefore \sqrt{\frac{9x-11}{-1+4x}} \rightarrow \frac{-4}{4} \rightarrow \sqrt{6} \rightarrow \min=0 \rightarrow \max=2x \rightarrow [0, \infty)$

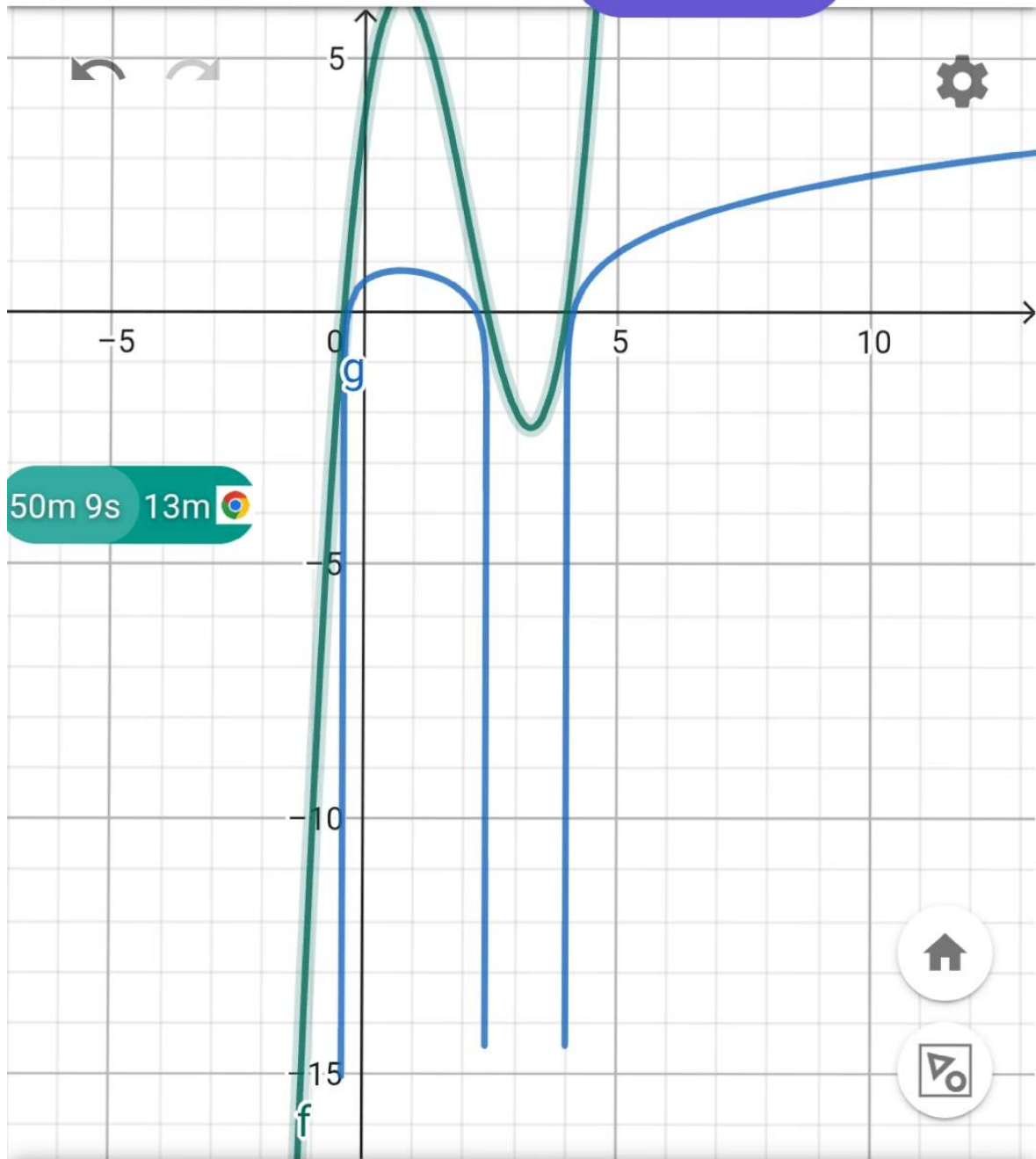
$$x \geq 0 \rightarrow x^2 - 2x \rightarrow x(x-2) \Rightarrow$$

$$x \leq 0 \rightarrow -x^2 - 2x \rightarrow -(x(x+2))$$



$$\Rightarrow P_1 = P_2$$





$$f(x) = x^3 - 6x^2 + 7x + 4$$



$$g(x) = \log_{10}(x^3 - 6x^2 + 7x + 4)$$



ورودی...



جبر



ابزارها



جدول



صفحه گسترده