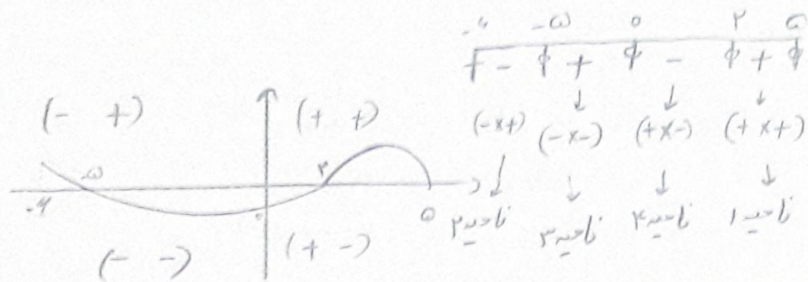


$$y = \sqrt{x f(x)} \quad x f(x) \geq 0 \rightarrow D_f = [-\infty, 0] \cup [2, \infty]$$

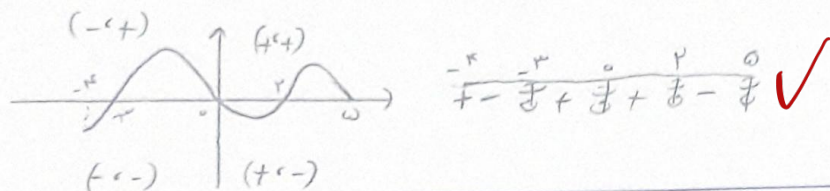
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$$y = \sqrt{\frac{-x}{f(x)}} \Rightarrow \frac{-x}{f(x)} \geq 0 \Rightarrow D_f = (-2, 2) - \{0\}$$

سید مصطفی در این بازه ولجود دارد

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

↓

$$f(2) - 2f(2) = 2^2 - 2(2) + 2 \Rightarrow -f(2) = 2 \Rightarrow f(2) = -2$$

$$\Rightarrow f(-2) - 2f(-2) = (-2)^2 - 2(-2) + 2 \Rightarrow f(-2) + 2 = 4 + 4 + 2 \Rightarrow f(-2) = 4 + 4 + 2 - 2 = 8$$

$$f(f(\omega)) + f(f(1)) \Rightarrow f(2) + f(\omega) = 9$$

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$$f(x) \begin{cases} x - \sqrt{x+1} & ; x > 2 \\ 2x + 2 & ; x \leq 2 \end{cases} \quad \begin{aligned} f(\omega) &= \omega - \sqrt{\omega+1} = \omega - \sqrt{9} = \omega - 3 = 2 \\ f(1) &= 2(1) + 2 = 4 \\ f(2) &= 2(2) + 2 = 6 \end{aligned}$$

$$f(x-1) - f(x) = 2x + 2$$

$$f(x) = ax^2 - bx + 2 \Rightarrow f(0) = 2$$

$$f(x-1) - f(x) = 2x + 2 \Rightarrow f(0) - f(1) = 2 \Rightarrow 2 - f(1) = 2 \Rightarrow f(1) = 0$$

$$f(x) = ax^2 - bx + 2 \Rightarrow f(1) = a - b + 2 = 0 \Rightarrow a - b = -2$$

$$f(1) = -2$$

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$$f(x) = \frac{x^r + rx + \omega}{x^r + rx + \nu} = \frac{x^r + rx + r + 1}{x^r + rx + r + r} = \frac{(x+r)^r + 1}{(x+r)^r + r} \Rightarrow \frac{(\sqrt{r} - x + r)^r + 1}{(\sqrt{r} - x + r)^r + r} = \frac{r+1}{r+r} = \frac{r}{r} = \frac{r}{r}$$

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

$$\Rightarrow f(-r) = (-r)^r + r = 11$$

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$$g(x) = \sqrt{1-x^2} \quad f(x) = \{(x, 0), (1, -r), (0, r), (1, 1)\}$$

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

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

$$f(x) = \{(1, -r), (r, 1), (r, r), (-\omega, r)\}$$

$$\text{الف) } f(x) = \{(1, -r), (r, r), (r, 1), (-\omega, r)\}$$

$$\text{ب) } f(x) + 1 = \{(1, -1), (r, r), (r, \omega), (-\omega, r)\}$$

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$$\text{ج) } f^r(x) + 1 = \{(1, 13), (r, r), (r, r9), (-\omega, 13)\} \quad \text{د) } f(x) = \left\{ \left(\frac{1}{r}, -r\right), (1, 1), \left(\frac{r}{r}, r\right), \left(-\frac{\omega}{r}, r\right) \right\}$$

$$\text{الف) } f - g = \{(1, r), (r, r), (r, r)\}$$

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$$\text{ب) } \frac{rf}{g} = \left\{ \left(1, \frac{r}{r}\right), \left(r, \frac{r}{r}\right), \left(r, \frac{r}{-1}\right) \right\} = \{(r, r), (r, -r)\}$$