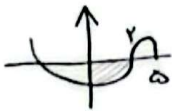


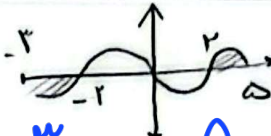
$$y = \sqrt{x f(x)} \quad x f(x) \geq 0$$



ما نیاز داریم تا جاهایی که x و $f(x)$ هم‌علامت باشند از آن‌ها بگذریم.

$$\Rightarrow D_f = [-1, 5] - \{ [-1, -5] \cup (0, 2) \} \quad ! \quad D_f = [-5, 0] \cup [2, 5]$$

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



عدد صحیح $3 \leftarrow D_f = (-3, 2) - \{ -3 \}$

جاهای منفی را حذف می‌کنیم و از آن‌ها می‌گذریم.

$$\Rightarrow D_f = [-4, 5] - \{ [-4, -2] \cup (2, 5) \} \quad ! \quad D_f = [-2, 2] \cup \{ 5 \}$$

اول از $a \rightarrow f(2) \rightarrow f(2) - 2f(2) = 2^2 - 4 + f \Rightarrow -f(2) = 2 \Rightarrow f(2) = -2$

و $b \rightarrow f(-2) \rightarrow f(-2) - 2f(2) = (-2)^2 - (-4) + f \Rightarrow f(-2) = 4 + 4 + f - 4 = 4$

$$f(-2) = 4$$

$$f(f(5)) + f(f(1)) = f(7) + f(5) = 7 + 2 = 9$$

$$5 - \sqrt{9} = 2$$

$$f(x) = \begin{cases} x - \sqrt{x+4} & ; x > 3 \\ 2x + 3 & ; x \leq 3 \end{cases}$$

$$f(x-1) - f(x) = 4x + 1 \Rightarrow a(x-1)^2 - b(-x-1) + 1 - (ax^2 - bx + 1) = 4x + 1$$

$$\Rightarrow ax^2 - 2ax + a - bx + b - ax^2 + bx = 4x + 1 \Rightarrow -2ax + a + b = 4x + 1$$

$$\begin{cases} -2a = 4 \\ a + b = 2 \end{cases} \Rightarrow b - a = 1 \Rightarrow a - b = -1$$

$$f(x) = \frac{x^r + f x + \Delta}{x^r + f x + v} \Rightarrow f(\sqrt{r} - r) = \frac{(\sqrt{r}-r) + f(\sqrt{r}-r) + \Delta}{(\sqrt{r}-r)^r + f(\sqrt{r}-r) + v} = \frac{f}{r} = r$$

١٥

$$f(\sqrt{r}-r) = r \quad f(n) = \frac{(n+r)^r + 1}{(n+r)^r + r}$$

$$f(\sqrt{r}-r) = \frac{r}{r}$$

٦

$$f(x - \frac{1}{x}) = \frac{x^r + 1}{x^r} \quad ١٥$$

$$(-r = x - \frac{1}{x}) \times x \Rightarrow x^r + r x - 1 = 0 \Rightarrow x^r = -r x + 1 \quad f(n) = n^r + r$$

٧

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

$$f(-r) = 11$$

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

١, ١٥

$$ب) \frac{g}{f} = \{(1, \frac{\sqrt{r}}{r}), (0, \frac{\sqrt{r}}{r})\} \rightarrow (0, \frac{r}{r})$$

٨

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

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

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

$$الف) rf(x) = \{(r, r), (r, f), (-\Delta, 1), (1, r)\}$$

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

$$ج) rf^r(x) + 1 = \{(r, 13), (r, 13), (-\Delta, 13), (1, 13)\}$$

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$$f(x) = \{(r, r), (v, r), (1, f), (r, 1), (\Delta, r)\}$$

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

١٠

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

$$\frac{rf}{g} = \{(r, r), (1, -r), (r, -r)\}$$