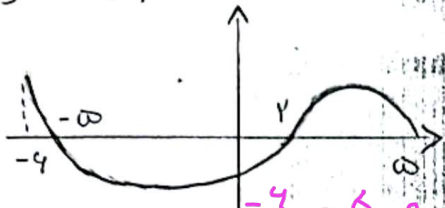
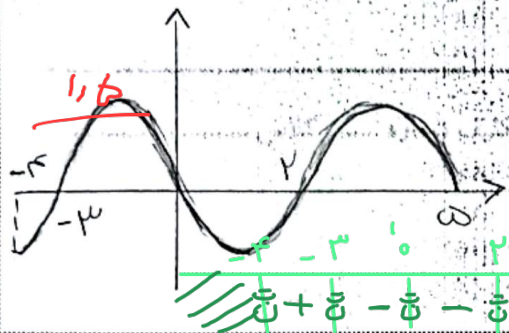


$$y = f(x)$$



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

$$D_f = [-\infty, 0] \cup [2, \infty]$$



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

$$\frac{x}{y} \leq 0$$

$$D_f = (-\pi, \pi) - \{0\}$$

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

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

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

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

$$f(x) = \begin{cases} x - \sqrt{x+1} & x > 1 \\ 2x + 1 & x \leq 1 \end{cases}$$

$$f(f(1)) + f(f(1)) = 9$$

✓

$$f(x) = ax^2 - bx + 1$$

$$f(n-1) - f(n) = 9n + 1$$

$$\frac{n=(n-1)}{n} \rightarrow a(n-1)^2 - b(n-1) + 1 = -2an + a + b = 9n + 1 \Rightarrow \begin{cases} a = -1 \\ b = 1 \end{cases}$$

$$a - b = -1 - 1 = -2$$

✓

$$f(n) = n^r - n + 1$$

$$\frac{\overbrace{r f(r)}^r + \overbrace{f(-1)}^{\infty}}{\underbrace{f^r(r)}_{(-1)^r=1}} = \frac{r+\infty}{1} = \infty$$

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$$f(n) = \begin{cases} n+1 & n \geq r \\ n^r & n < r \end{cases}$$

$$\frac{\overbrace{r f(r)}^{r+1} - \overbrace{r f(-1)}^{-1}}{\underbrace{f(r)}_r} = \frac{r+1}{r}$$

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$$f = \{(r, 4), (r, r), (r, 1), (1, 4)\}$$

$$\frac{f(f(r)) - f(f(r))}{f(1) - r} = \frac{4 - 4}{r} = \frac{0}{r} = 0$$

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$$f(n) = \frac{n^r + \epsilon n + 9}{n^r + \epsilon n + \omega} = \frac{(\sqrt{r}-r)^r + \epsilon(\sqrt{r}-r) + 9}{(\sqrt{r}-r)^r + \epsilon(\sqrt{r}-r) + \omega} = \frac{1}{r} = r$$

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$$\underbrace{f(f(\sqrt{r}-r))}_r = \frac{r-1+9}{\epsilon-1+\omega} = \frac{r}{14}$$

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

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

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

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