

$y = \sqrt{x f(x)} \Rightarrow x f(x) \geq 0$ ۱۹, ۷۵

$0 \leftarrow -5, 2, 5, -5, 0, -2, 5$

منفی $x = -2 \rightarrow \frac{-2}{f(-2)}$ منفی $\checkmark$ (باتوجه به شکل)

$D_f = [-5, 0] \cup [2, 5]$

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

$1, 75$ $\frac{-(-4)}{f(-4)}$ منفی $\checkmark$ (باتوجه به شکل)

$D_f = (-3, 0) \cup (0, 2) \cup (5, +\infty)$

تعداد عدد صحیح $\leftarrow$ ۳ (شماره عدد صحیح)

$f(x) - 2f(2) = x^2 - 3x + 4 \rightarrow$ برای اسم $f(2)$ را از f ۲ (چک)

$f(2) - 2f(2) = 4 - 6 + 4$ ۳

$-f(2) = 2$

$f(2) = -2$

$f(-2) = 10$

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

$f(f(5)) + f(f(1)) = ?$

$5 - \sqrt{5} = 4.23$ ۲ (چک)

$2 \times 2 + 3 = 7$

$2 \times 1 + 3 = 5$

$5 - \sqrt{0+5} = 1$

$7 + 1 = 8$

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

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

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

$-2a = 4 \Rightarrow a = -2$

$a + b = 2 \Rightarrow b = 4$

$$f(x) = x^r - 9x + 1 \Rightarrow \frac{rf(r) + f(-1)}{f'(r)} \rightarrow \frac{r \times 1 + 0}{(-1)^r} = \frac{1}{1} = 1$$

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

$$f(-1) = 1 + 9 + 1 = 0$$

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

(C) ✓

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

$$\frac{r \times 1^r - r \times r}{1} = \frac{r(1 - r)}{1} = -\frac{1}{2}$$

$$\frac{rf(r) - rf(-r)}{f(r)}$$

$$f(r) = rx^r + 1 = 1^r$$

$$f(-r) = (-r)^r = r$$

$$f(r) = rx^r + 1 = 1$$

(C) ✓

$$f = \{(r, 4), (r, 2), (r, 1), (1, 9)\} \Rightarrow \frac{f(f(r)) - f(f(r))}{\frac{f(1) - r}{4}}$$

$$\frac{4 - 4}{4 - r} = \frac{0}{r} = 0 \rightarrow -\frac{1}{2}$$

(C) ✓

$$f(x) = \frac{x^r + rx + 9}{x^r + rx + 0}$$

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

$$f(r) = \frac{r + 1 + 9}{r + 1 + 0} = \frac{11}{11} = 1$$

$$f(\sqrt{r-r}) = \frac{(\sqrt{r-r})^r + r(\sqrt{r-r}) + 9}{(\sqrt{r-r})^r + r(\sqrt{r-r}) + 0}$$

$$\frac{r \times \sqrt{r-r} + r \times \sqrt{r-r} - 1 + 9}{r \times \sqrt{r-r} + r \times \sqrt{r-r} - 1 + 0} = \frac{8}{r} = r$$

(C) ✓

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

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

$$x^r + r + \frac{1}{x^r} - x^r - \frac{1}{x^r} = r \rightarrow -\frac{1}{2}$$

(C) ✓