

$$x f(x) > 0$$

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

$$[-9, -\infty) \text{ در بازه } \rightarrow x < 0, f(x) > 0 \rightarrow x f(x) < 0 \quad \times$$

$$[-\infty, 0] \text{ در بازه } \rightarrow x \leq 0, f(x) \leq 0 \rightarrow x f(x) \geq 0 \quad \checkmark$$

$$(0, 2) \text{ در بازه } \rightarrow x > 0, f(x) < 0 \rightarrow x f(x) < 0 \quad \times$$

$$[2, \infty] \text{ در بازه } \rightarrow x > 0, f(x) \geq 0 \rightarrow x f(x) \geq 0 \quad \checkmark$$

$\frac{-x}{f(x)} \geq 0$

$f(x) \leq 0 \rightarrow x \in (-3, 0) \cup (2, \infty)$

$$(-3, 0) \cup (2, \infty) \rightarrow -3, -1, 2, 4$$

$$x = 2 \rightarrow f(2) - 2f(2) = \frac{2 - 9 + 4}{2} \rightarrow -f(2) \leq 2 \rightarrow f(2) = -2$$

$$x = -2 \rightarrow f(-2) - 2f(2) = 4 + 9 + 4 \rightarrow f(-2) \leq 10$$

$$f(\infty) \rightarrow x \leq \infty \rightarrow \infty - \sqrt{\frac{\infty}{9} + 4} \leq \infty - 3 \leq 4 \rightarrow$$

$$f(2) \rightarrow x \leq 2 \rightarrow \frac{2}{2} + 3 \leq \sqrt{\quad}$$

$$f(1) \rightarrow x \leq 1 \rightarrow \frac{1}{2} + 3 \leq \infty \rightarrow f(\infty) \rightarrow x \leq \infty \rightarrow \infty - \sqrt{\frac{\infty}{9} + 4} \leq \infty - 3 \leq 4$$

$$f(x-1) \leq a(x-1)^2 - b(x-1) + 2 = \frac{a(x^2 - 2x + 1) - b(x-1) + 2}{ax^2 - 2ax + a - bx + b + 2}$$

$$f(x-1) - f(x) \leq (ax^2 - 2ax + a - bx + b + 2) - (ax^2 - bx + 2) = -2ax + a + b = 9x + 2$$

$$\rightarrow -2ax + a + b = 9x + 2 \xrightarrow{\text{ضریب } x \text{ برابر}} -2a \leq 9 \quad -2a + b \leq 2$$

$$\rightarrow a - b \leq -3 - 2 \leq -5$$

$$a \leq -2$$

$$b \leq 5$$

$$\frac{r \times (\sqrt{r} - 9 + 1) + \frac{1}{(-1)^r + r + 1}}{\Delta} = \frac{r + \Delta}{\Delta} = \boxed{\frac{V}{\Delta}}$$

$$f(r) \leq \sqrt{r} - 9 + 1 \leq -1 \rightarrow f(-1) \leq 1 + r + 1 \leq \Delta$$

$$\frac{r \left(\frac{\sqrt{r}}{r} + 1 \right) - r \left(\frac{r}{(-1)^r + r + 1} \right)}{(r \times r) + 1} = \frac{r - 1}{V} = \boxed{\frac{r}{V}}$$

$$\frac{f(1) - f(r)}{9 - r} = \frac{9 - 9}{r} = \boxed{9}$$

$$f(\sqrt{r} - r) = \frac{V - \sqrt{r} + f(\sqrt{r} - r) + 9}{V - \sqrt{r} + \frac{r}{(-1)^r + r + 1} + \Delta} = \frac{\Delta}{r} = r$$

$$(\sqrt{r} - r)^r \leq r + r - r\sqrt{r} \leq V - r\sqrt{r}$$

$$f(r) = \frac{r + \Delta + 9}{r + \Delta + \Delta} = \boxed{\frac{r}{V}}$$

$$f(\sqrt{q}) \leq (\sqrt{q})^r + \frac{1}{(\sqrt{q})^r} \leq |q| + \frac{1}{|q|} \xrightarrow{(\cdot)^r} q^r + \frac{1}{q^r} + r$$

$$f(q) \leq q^r + \frac{1}{q^r}$$

$$(f(\sqrt{q}))^r - f(q) \leq q^r + \frac{1}{q^r} + r - q^r + \frac{1}{q^r} = \boxed{r}$$