

$$D_f = \left(-\frac{\varepsilon}{\mu}, +\infty \right)$$

$$\hookrightarrow g(n) = -1n^2$$

$$f(1-\sqrt{n}) = \begin{cases} \sqrt{n}+1 & n \leq 0 \\ \varepsilon\sqrt{n} & n > 0 \end{cases}$$

$$f(-1) + f(\varepsilon) \rightarrow 1-\varepsilon\sqrt{n} \rightarrow -\varepsilon\sqrt{n} \rightarrow \sqrt{n} = 1$$

$$\downarrow$$

$$1-\varepsilon\sqrt{n} = 1$$

$$\frac{-\varepsilon\sqrt{n} = 0}{\sqrt{n} = 1} \rightarrow \frac{\varepsilon\sqrt{1}}{1} \rightarrow \frac{\varepsilon}{1} \rightarrow \varepsilon$$

$$\frac{\sqrt{-1} + \varepsilon}{-1 + \varepsilon} \rightarrow \varepsilon + 1 \rightarrow \boxed{1}$$

$$x + \sqrt{x} = 1 \rightarrow x \in \mathbb{R} \rightarrow \sqrt{x} + \sqrt{x} = 2\sqrt{x} + 1 \geq 2\sqrt{1} = 2$$

$$\frac{1}{2\sqrt{x}}$$

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

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

$$(n-1)^2 + (1-n)^2 = (n^2 - 2n + 1) + (1 - 2n + n^2) = 2n^2 - 4n + 2 = 2(n-1)^2$$

$$f - \varepsilon a \geq 0 \rightarrow \varepsilon \geq \frac{f}{a} \rightarrow \frac{\varepsilon}{f} \geq \frac{1}{a} \rightarrow n \geq \frac{1}{\varepsilon}$$

$$b - \varepsilon n \geq 0 \rightarrow n \leq \frac{b}{\varepsilon} \rightarrow \frac{b}{\varepsilon} \geq 1 \rightarrow \boxed{b \geq \varepsilon}$$

$$\frac{f}{\varepsilon} \geq 1 \rightarrow \boxed{a \leq \frac{f}{\varepsilon}}$$

$$\frac{b}{\varepsilon} \geq 1 \rightarrow \boxed{b \geq \varepsilon}$$

$$f(n) = \sqrt{\varepsilon n - \varepsilon a} + k - 1$$

$$f(a) = \sqrt{\varepsilon a - \varepsilon a} + k - 1 = k - 1$$

$$g(n) = \sqrt{b - \varepsilon n} + \varepsilon k$$

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

$$f(1) = \sqrt{\varepsilon - \varepsilon a} + k - 1$$

$$- \varepsilon k$$

$$\sqrt{\varepsilon - \varepsilon a} + \varepsilon k - 1 - \sqrt{b - \varepsilon} - \varepsilon k = k$$

$$\sqrt{\varepsilon - \varepsilon a} - \varepsilon k - 1 - \sqrt{b - \varepsilon} = 0$$

$$\sqrt{\varepsilon - \varepsilon a} - \varepsilon k - 1 = \sqrt{b - \varepsilon} \rightarrow \sqrt{\varepsilon - \varepsilon a} - k - 1 = \sqrt{b - \varepsilon}$$

$$f - \varepsilon a = f - \varepsilon = 0$$

$$f(1) = k - 1$$

$$g(1) = \sqrt{\varepsilon - \varepsilon} + \varepsilon k = \varepsilon k$$

$$\varepsilon(k-1) - \varepsilon k = k \rightarrow k = -1$$

$$b - \varepsilon \geq 0$$

$$b \geq \varepsilon$$

$$\frac{f(\frac{\varepsilon}{f})}{\varepsilon} - 1 + 1 = \boxed{1}$$

$$m - n \geq 0 \rightarrow n \leq m$$

$$\varepsilon n + 1 \geq 0 \rightarrow n \geq -1$$

$$f, g \in [-1, m] \rightarrow m \geq 1$$

$$f(\varepsilon) - g(\varepsilon) = \varepsilon\sqrt{\varepsilon} \rightarrow f(\varepsilon) = \sqrt{\varepsilon} + n = \varepsilon + n \quad g(\varepsilon) = \sqrt{\varepsilon(\varepsilon) + \varepsilon} = \sqrt{\varepsilon} = \varepsilon\sqrt{\varepsilon}$$

$$\varepsilon + n - \varepsilon\sqrt{\varepsilon} = \varepsilon\sqrt{\varepsilon} \rightarrow n = \varepsilon\sqrt{\varepsilon} - \varepsilon \quad m + n = \varepsilon + (\varepsilon\sqrt{\varepsilon} - \varepsilon) = \varepsilon\sqrt{\varepsilon} = \varepsilon$$