

$$Df = [1, \omega] \cup [-1, -\omega]$$

1

$$Df = (1, \omega) \cup (-1, -\omega)$$

2

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

$$x=1$$

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

$$-f(1) = 1 \Rightarrow f(1) = -1$$

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

$$f(x) = -1$$

$$f(1) - 1 = 1 + 1 + 1 \Rightarrow f(1) = 1$$

3

$$f(f(\omega)) + f(\underbrace{f(1)}_{\omega}) = f(1) + f(\omega) = 1 + 1 = 2$$

4

$$f(x) = ax^2 - bx + 1 \Rightarrow x=1 \leq x=0$$

$$1a - 1b + 1 = f(x)$$

$$f(x) = a - b + 1$$

$$a - b + 1 = f(x)$$

$$f(x) = 1$$

$$f(x-1) - f(x) = 1$$

$$f(x-1) - f(x) = 1 \Rightarrow a - b = 1$$

$$a - b + 1 - 1 + b - 1a = 1 \Rightarrow -1a + b = 1$$

$$-1$$

$$1$$

$$\frac{1 \cdot f(1) + f(-1)}{f(1)} = \frac{(1 \times 1) + \omega}{1} = \boxed{V}$$

$$f(1) = 1 \quad f(1) = -1$$

$$f(-1) = \omega$$

$$\frac{1 \cdot f(1) - 1 \cdot f(-1)}{f(1)} = \frac{1 \cdot 1 - 1}{V} = \frac{0}{V}$$

$$f(1) = 1 \quad f(1) = V$$

$$f(-1) = 1$$

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

$$f(1) = 1$$

$$f(1) = 1$$

$$f(1) = 1$$

$$f(1) = 1$$

$$f(1) = 1$$

$$\frac{(n+1)^1 + \omega}{(n+1)^1 + 1} = \frac{(\sqrt{1})^1 + \omega}{(\sqrt{1})^1 + 1} = \frac{1}{1} = 1$$

$$\frac{(n+1)^1 + \omega}{(n+1)^1 + 1} = \frac{1 + \omega}{1 + 1} = \frac{1}{2}$$

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