

① $(-4, -5) \rightarrow x < 0, f(x) > 0 \Rightarrow \sqrt{x \cdot f(x)} \rightarrow$ منی X

② $(-5, 0) \rightarrow x < 0, f(x) < 0 \Rightarrow x + f(x) \rightarrow$ مثبت ✓

③ $\{0\} \rightarrow 0 \times \checkmark$ ④ $\{-5, 2, 5\} \Rightarrow 0 \checkmark$ $D_f = [-5, 0] \cup [2, 5]$

⑤ $(0, 2) \rightarrow x > 0, f(x) < 0 \Rightarrow x \cdot f(x) \rightarrow$ منی X

⑥ $(2, 5) \rightarrow x > 0, f(x) > 0 \Rightarrow x + f(x) \rightarrow$ مثبت ✓

① $(-4, -3) \rightarrow x < 0, f(x) < 0 \Rightarrow$ منی X

② $(-3, 0) \rightarrow x < 0, f(x) > 0 \Rightarrow$ مثبت ✓

③ $(0, 2) \rightarrow x > 0, f(x) < 0 \Rightarrow$ مثبت ✓ $D_f = (-3, 2) - \{0\}$

④ $(2, 5) \rightarrow x > 0, f(x) > 0 \Rightarrow$ منی X

⑤ $\{0\} \rightarrow 0 \rightarrow \emptyset \subset X$

⑥ $\{-3, 2, 5\} \rightarrow 0 \rightarrow \emptyset \subset X$

$f(2) - 2f(2) = x^2 - (2x + c) \Rightarrow -f(2) = \frac{4 - 4 + c}{-1} = 2 \Rightarrow f(2) = -2$

~~$f(x) = x^2 - (2x + c)$~~
 ~~$f(x) = x^2 - 2x - c$~~

$f(x) + x^2 = x^2 - 2x + c \Rightarrow f(-2) = \frac{(-2)^2 - 2(-2) + c - c}{2 + 4} = \frac{10}{6} \Rightarrow f(-2) = \frac{5}{3}$

$f(f(5)) + f(f(1)) = f(2) + f(5) = \frac{2 \times 2 + 3}{2} + \frac{(5 - 3)}{2} = 9$

$\downarrow$
 $5 - \sqrt{5} \times 5 = 2$
 $\downarrow$
 $2 \times 1 + c = 5$

$f(n-1) - f(n) = a(n-1)^2 - b(n-1) + 2 - (a(n^2) - b(n) + 2)$

$a(n^2 - 2n + 1) - b(n-1) + 2 - (an^2 - bn + 2) = -2an + (a+b) = -2n \times \frac{(a)}{1} + (a+b) = 9n + 2$

$a - b = -2 - 5 = -7$

$a = -3$

$b = +5$

$$\frac{r(r^2 - \epsilon r + 1) + (1 - \epsilon) - \epsilon(-1) + 1}{(r^2 - \epsilon r + 1)^2} = \frac{r + \omega}{1} = \underline{\underline{V}}$$

$\epsilon - \epsilon + 1 = 1$

f

$$\frac{r(r^2 - \epsilon r + 1) - r(\epsilon)}{r^2 - \epsilon r + 1} = \frac{r^2 - \epsilon r - \epsilon r + 1}{r^2 - \epsilon r + 1} = \underline{\underline{V}}$$

V

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

$$f(\epsilon) \rightarrow 1$$

$$f(r) \rightarrow r$$

A

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

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

$$\frac{1}{\epsilon} = \underline{\underline{r}}$$

q

$$\left(f\left(\frac{1}{n}\right) = x + \frac{1}{n}\right)^r = x^r + \frac{1}{n^r} + r$$

$$x^r + \frac{1}{n^r} + r - \left(f\left(\frac{1}{n}\right)\right) = x^r + \frac{1}{n^r} + r - x^r - \frac{1}{n^r} = \underline{\underline{r}}$$

1.