

Bro

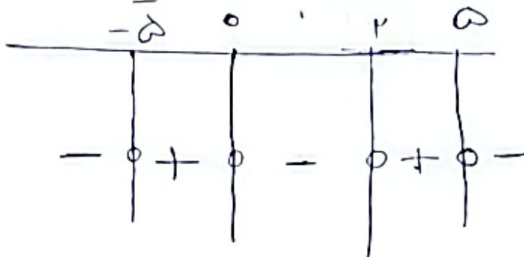
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$$nf(n) \geq 0 \rightarrow f(n) \text{ limited } : \omega, 1, -\omega$$

IV

o1

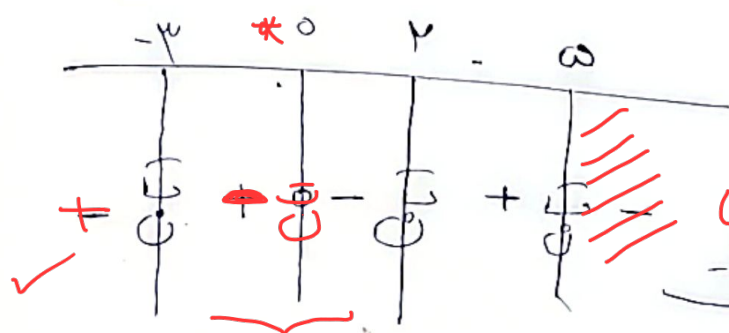
$$D_f = [-\omega, 0] \cup [1, \omega]$$



② ✓

$$n \text{ limited } \rightarrow n = 1, -1, \omega$$

o2



①

$$D_f = (-1, 0] \cup (0, \omega]$$

-1, 0, 1, omega (all values)

omega

$$n = -1 \rightarrow f(-1) - 1f(1) = (-1) - 1(1) = -2$$

$$n = 1 \rightarrow f(1) - 1f(-1) = (1) - 1(-1) = 2$$

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

$$f(1) - 1f(1) = 2 \rightarrow f(1) = -2$$

0

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

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

$$f(-1) = 1$$

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

$$f(1) = 1(1) + 1 = 2 \rightarrow f(f(1)) = f(2)$$

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

$$f(1) = 1(1) + 1 = 2 \rightarrow f(f(1)) + f(f(\omega)) = 2 + 1 = 3$$

$$\begin{aligned} f(n-1) &= a(n-1)^2 - b(n-1) + 1 = a(n^2 - 2n + 1) - b(n-1) + 1 = a n^2 - 2a n + a - b n + b + 1 \\ &= a n^2 - (2a + b)n + (a + b + 1) \\ f(n-1) - f(n) &= (a n^2 - (2a + b)n + (a + b + 1)) - (a n^2 - b n + 1) \\ &= -2a n + a + b \end{aligned}$$

(a) Jawab (5 soal)

$$\begin{aligned} -ra + (a+b) &= 4n+1 \\ -ra &= 4 \rightarrow a = -1 \\ -ra + b &= 1 \rightarrow b = 0 \end{aligned}$$

(2) ✓

$$a-b = -1-0 = -1$$

$$\left. \begin{aligned} f(3) &= 3^2 - 9 + 1 = 1 \rightarrow f(f(3)) = 3 \\ f(-1) &= 1 + 1 + 1 = 3 \\ f(1) &= 1 - 9 + 1 = -1 \rightarrow f(f(1)) = 1 \end{aligned} \right\} \frac{3+3}{1} = 6$$

$$\left. \begin{aligned} f(1) &= 1^2 + 1 = 2 \\ f(-1) &= 1 \\ f(2) &= 4 + 1 = 5 \end{aligned} \right\} \frac{f(1) - f(2)}{1} = \frac{2-5}{1} = -3$$

$$\left. \begin{aligned} f(1) &= 1 \\ f(2) &= 2 \\ f(4) &= 4 \end{aligned} \right\} \begin{aligned} &\rightarrow f(f(1)) = f(1) = 1 \\ &\rightarrow f(f(2)) = f(2) = 2 \\ &\rightarrow f(f(4)) = f(4) = 4 \end{aligned} \right\} \frac{4-4}{4-2} = \frac{0}{2} = 0$$

$$\left. \begin{aligned} f(x) &= \frac{(x+1)^2 + 5}{(x+1)^2 + 1} \\ a = \sqrt{3} - 1 \rightarrow x+1 &= \sqrt{3} \rightarrow (x+1)^2 = 3 \end{aligned} \right\} \begin{aligned} f(\sqrt{3}-1) &= \frac{3+5}{3+1} = 2 \\ f(1) &= \frac{1^2+5}{1^2+1} = \frac{6}{2} = 3 \end{aligned}$$

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

$$f(\sqrt{n})^2 = \left(n + \frac{1}{n}\right)^2 = n^2 + 1 + \frac{1}{n^2}$$

$$(f(\sqrt{n}))^2 - f(n) = \left(n^2 + \frac{1}{n^2} + 1\right) - \left(n^2 + \frac{1}{n^2}\right) = 1$$