

لرود دوازدهم دختر A

دنيا جميدى

تلف شماره ۳

$$y = \sqrt{f(x) - x + 1}$$

$$f(x) = \begin{cases} 2x-1 & [x] \geq 2 \text{ یا } x \geq \omega \\ x+3 & [x] \leq 2 \text{ یا } x < \omega \end{cases} \quad (2) - 1$$

$$I) x \geq \omega \rightarrow 2x-1-x+1 \geq 0 \rightarrow x \geq 0 \xrightarrow{\cap} x \geq \omega$$

$$II) x < \omega \rightarrow x+3-x+1 \geq 0 \rightarrow x+4 \geq 0 \rightarrow x \geq -4 \xrightarrow{\cap} -4 \leq x < \omega$$

$$(I) \cup (II) = [-4, +\infty)$$

$$10 \quad \frac{r^2 x^r + r^2 x^r + 1 \cdot x + r}{(r^2 x^r + r^2 x^r + 1)^2} = \frac{r(2x+1)^r}{(2x+1)^2} = \frac{r}{2x+1}$$

$$D = \mathbb{R} - \left\{ -\frac{1}{r} \right\}$$

$$15 \quad f(x) = \begin{cases} \frac{x^r + r^2 x^r - x - r}{x^r - 1} = \frac{(x+r)(x^r-1)}{x^r-1} & x+r \quad x \neq \pm 1 \\ \frac{ax+r}{x+b} & x = \pm 1 \end{cases}$$

$$g(x) = x + c$$

$$b + c = r \cdot \frac{1}{r} = \frac{\omega}{r}$$

$$20 \quad f(r) = x + r = r$$

$$g(r) = r + c = r \rightarrow c = 0$$

$$25 \quad \begin{cases} f(1) = \frac{a+r}{b+1} = r \\ g(1) = r \end{cases} \quad \begin{cases} a+r = r(b+1) \\ r-a = b-1 \end{cases} \quad \begin{cases} r = rb + r \\ rb = r \\ b = \frac{1}{r} \end{cases}$$

$$\frac{x+1}{x-c} = \frac{(x+1)(x-1)}{x^2+ax+b} \rightarrow x^2 - (c+1)x + c = x^2 + ax + b$$

$$\begin{array}{l} -c - 1 = a \\ b = c \end{array} \rightarrow a = -b - 1 \rightarrow \boxed{a = -r} \quad \boxed{c = 1}$$

Ex: 1 $x^r + ax + b \xrightarrow{\Delta = 0} cx^r - fb = 0$
 $bx^r + rx + 1 - \varepsilon b = 0 \quad bx^r - rx + 1 = 0 \quad (b-1)x^r = 0 \rightarrow b=1$

$$g(x) = f(x+1) + f(1-x) = ? = (x-1)^4 (x) + (-x-1)^4 (-x) \quad (7)$$

$$\cancel{2x^2} - \cancel{1}x^2 + \cancel{1}x - \cancel{2x^2} - \cancel{1}x^2 - \cancel{1}x = -1x^2$$

$f(r-1) + f(r) = ?$ (r) 4 15

$k+1 = \{ \omega \}$ ✓

$$1 - rx = -1 \rightarrow rx = 2 \quad x=1 \rightarrow \int_0^2 \frac{1}{\sqrt{1-x^2}} dx \rightarrow \sqrt{1-x^2} = 1$$

$$1 - \epsilon_n = \mu \rightarrow \epsilon_n = -\epsilon \quad n = -1 \rightarrow \text{مقدار ضابطه} \rightarrow \sqrt{-1 + \epsilon} = \epsilon - 1 - \frac{1}{2}$$

$$f(x + \sqrt{x}) = x^k + \sqrt{x} = k^k + \sqrt{k} = 254 + 17 = 271$$

$$f(y) = ?$$

$$x + \sqrt{x} = 4 \quad \sqrt{x} = t \quad \xrightarrow{\quad} \quad t^2 + t - 4 = 0 \quad (t - 2)(t + 2) = 0$$

$L \rightarrow \sqrt{n} \cdot t = y \rightarrow n = y^2$ ✓

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

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

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

$$x^2 - 1 - 1^2 + x - 1 + 1 - x + 1 - x^2 - 1^2 + x - 1 = 0$$

5

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

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

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

$$Df = x-a \geq 0$$

$$x \geq \frac{a}{k} a$$

$$\text{as } \frac{a}{k} = 1$$

$$Dg = b-x \geq 0$$

$$x \leq \frac{b}{k}$$

$$\downarrow \frac{a}{k} = \frac{b}{k} = 1$$

$$\downarrow a = \frac{k}{k} b = k$$

10

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

$$f-g = k-1-k = -1 \rightarrow k = -1$$

15

$$ka - \frac{b}{k} - k = k\left(\frac{a}{k}\right) - \frac{k}{k} - (-1) = k - 1 + 1 = k$$

$$f(x) = \sqrt{m-x} + n$$

$$Df \times g = Df \cap Dg$$

$$g(x) = \sqrt{x+r}$$

20

$$Df \Rightarrow m-x \geq 0$$

$$x \leq m$$

$$[-1, m] = [-1, 2]$$

$$Dg \Rightarrow x+r \geq 0$$

$$x \geq -1$$

$$\downarrow m = 2$$

$$f-g(x) = \sqrt{v-x} + n - \sqrt{x} = v+n - \sqrt{x} = 4\sqrt{v}$$

$$n = 4\sqrt{v}$$

25

$$m+n = 4\sqrt{v} - 1 + v = 4\sqrt{v} + 3$$