

کیمیائی وادی - تکلیف کا حساب

$$F(x) = \begin{cases} (\alpha+1)(x+p) & : x > 1 \\ p\alpha + px & : x < 1 \end{cases}$$

$$pF(\infty) = F(\infty) + \alpha$$

؟ ← اس کا جواب

$$F(\infty) \rightarrow \infty > 1 \rightarrow (\alpha+1)(x+p) \rightarrow F(\infty) = (\alpha+1)(V) = V\alpha + V$$

$$F(-p) \rightarrow -p < 1 \rightarrow p\alpha + px \rightarrow F(-p) = p\alpha - F$$

$$\text{وہ } p(V\alpha + V) = p\alpha - F + \alpha \leadsto VF\alpha + VF = F\alpha - F$$

$$10\alpha = -11 \rightarrow \alpha = -\frac{9}{9}$$

$$F(x) = \sqrt{x} + \frac{1}{\sqrt{x}} + p$$

$$F(p-\sqrt{p}) + F(p+\sqrt{p}) = ?$$

$$(p-\sqrt{p}, p+\sqrt{p}) \rightarrow F-p=1 \rightarrow \text{وہ } p-\sqrt{p} = \frac{1}{p+\sqrt{p}} \leadsto \begin{cases} z = \sqrt{p-\sqrt{p}} \\ \frac{1}{z} = \sqrt{p+\sqrt{p}} \end{cases}$$

$$z^p + \frac{1}{z^p} = (p-\sqrt{p}) + (p+\sqrt{p}) = F$$

$$(\frac{1}{z} + z)^{\frac{1}{p}} = \frac{1}{z^p} + z^p + p \rightarrow F+p=C \rightarrow z + \frac{1}{z} = \sqrt{C}$$

$$F(p-\sqrt{p}) + F(p+\sqrt{p}) = \sqrt{p-\sqrt{p}} + \frac{1}{\sqrt{p-\sqrt{p}}} + p + \sqrt{p+\sqrt{p}} + \frac{1}{\sqrt{p+\sqrt{p}}} + p = p\sqrt{C} + F$$

$$pF(x) - pF(-x) = Fx^p - x$$

$$F(x) = ?$$

$$pF(x) - x \in x \text{ (جس کا } pF(-x) - pF(x) = Fx^p + x$$

$$F(x) = A \quad F(-x) = B$$

$$F(x) = -Fx^p - \frac{x}{\theta}$$

$$pA - pB = Fx^p - x \xrightarrow{x^p} pA - pB = Ax^p - px$$

$$-pA + pB = Fx^p + x \xrightarrow{x^p} -pA + pB = 1px^p + px$$

$$-pA = p\theta x^p + x \rightarrow F(x) = -\frac{p\theta x^p - x}{\theta}$$

$$(x+p)F(x) - pxF(x+p) = Fx^p - mx + pm - 1$$

$$F(0) = ?$$

$$1 > x = 0 \rightarrow (0+p)F(0) - p(0)F(p) = pm - 1 \rightarrow pF(0) = pm - 1 \quad \textcircled{1}$$

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$$P, x = -P \rightarrow (-P, P, f(-P) - P(-P), f(0) = P f(0) \rightarrow \boxed{P f(0) = 10 + 10m}$$

$$P f(0) = 10 + 10m$$

$$P f(0) = 10m - 1 \rightarrow P f(0) = 10m - P \quad \left[10m - P = 10 + 10m \rightarrow m = 1 \right]$$

$$P f(0) = 10(1) - 1 = 9 \rightarrow \underline{f(0) = 9}$$

$$f(x) = ax + b$$

$$f(x) + f\left(\frac{1}{x}\right) = \frac{10x^2 - 12x + 10}{x} \rightarrow ax + b + \frac{a}{x} + b = ax + \frac{a}{x} + 2b$$

$$\text{مساوی } \rightarrow 10x - 12 + \frac{10}{x} = ax + \frac{a}{x} + 2b$$

$$a = 10, b = -1 \rightarrow f(x) = 10x - 1$$

$$f(-1) = 10(-1) - 1 = -11 \rightarrow f(-1) = -11 \rightarrow \boxed{f(-1) = -9}$$

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

$$g(x) = -(1-x)\sqrt{1-x}$$

$$g(x) = -\sqrt{(1-x)^3}$$

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

$$g(x) = -(1-x)\frac{1}{\sqrt{1-x}}$$

$$f(x) = g(x)$$

داده های تابع را مقایسه می کنیم
 $1-x \geq 0 \rightarrow 1 \geq x$
 دامنه هر دو تابع یکسان است
 $f = g \leftarrow$ دامنه هر دو تابع یکسان است

$$f(x) = x\sqrt{x}$$

$$f(x) \geq 0, x \geq 0 \rightarrow D_f = [0, +\infty)$$

$$g(x) = \sqrt{x^3 x}$$

$$g(x) = \sqrt{x^4 x} \rightarrow x\sqrt{x} \quad / \quad g(x) \geq 0, x \geq 0 \rightarrow D_g = [0, +\infty)$$

$$D_f = D_g, f = g \rightarrow \text{برابرند}$$

دامنه

$$f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor]$$

$$\rightarrow \sqrt{x} - [x] \xrightarrow{x=4} 2 - [2] = 0$$

$$\text{مساوی } \rightarrow f(x) = 0$$

$$g(x) = \sqrt{x - |x|}$$

$$\xrightarrow{x \geq 0} x - |x| = 0 \rightarrow g(x) = \sqrt{0} = 0$$

$$\xrightarrow{x < 0} x - |x| = x - (-x) = 2x = \sqrt{4x^2} \rightarrow \text{برابرند}$$

$$x \geq 0 \rightarrow g(x) = 0$$

$$x < 0 \rightarrow f(x) = g(x) = 0$$

برای $x < 0$ داریم $f(x) = g(x) = 0$
 $f = g \leftarrow$ دامنه هر دو تابع یکسان است
 دو تابع برابرند

$$P = \{ (1, Y_1), (Y_1, W_1), (W_1, 1), (1, 0), (0, 1) \}$$

$$y = \{(-1, 1), (1, 1), (1, 3), (3, 1), (1, 5), (5, 1), (\sqrt{7}, 1)\}$$

Wir: $\left(\frac{f+g}{f-g}\right)(1) \rightarrow f(1)=p, g(1)=1, \frac{p+1}{p-1} = \frac{2}{1} = 2$

$$f, \left(\frac{f+g}{f-g} \right) \psi, \quad \chi(\psi) = \psi, \quad g(\psi) = \psi, \quad \frac{\psi + \psi}{\psi - \psi} = \frac{\psi}{0} = \infty$$

2. $f(c) = 0, g(c) = 1, 0 \leq x \leq 1$

$$P(x) = \{ (0, 1), (-1, 2), (0, 0), (1, -1), (2, -1) \}$$

الف) $g(x) = F(x) - 1$

$$g(1) = 1 \rightarrow x^{\mu-1} = 1 \rightarrow x = 1$$

$$g(0) = 1 \rightarrow 2^x - 1 = -1 \rightarrow x = 0$$

$$g\left(\frac{1}{\mu}\right) = 0 \rightarrow \mu x - 1 = 0 \rightarrow x = \frac{1}{\mu}$$

$$g_{\frac{1}{2}} = 1 - \frac{1}{2} \quad \text{---} \quad g_{\frac{1}{2}} = 1 - \frac{1}{2} \quad \text{---} \quad g_{\frac{1}{2}} = 1 - \frac{1}{2}$$

$$g_c \frac{1}{x} = -1 - x \quad x = 1 = x = \frac{1}{x}$$

$$g = \left\{ (1, 1), (0, F), \left(\frac{1}{\mu}, 0 \right), \left(-\frac{1}{\mu}, 0 \right), \left(\frac{F}{\mu}, -1 \right) \right\}$$

$$\hookrightarrow h(x) = f(|x|)$$

$$P(\text{USM}) \rightarrow P(\text{OP}) \rightarrow$$

چون داخل تابع f باید αx قرار بگیرد در می توانی f با اینها بنویسی

$$h=1 \rightarrow |x|=p \rightarrow x = \pm p$$

$$h = 0 \rightarrow |x| = 0 \rightarrow x = 0$$

$$h = -1 \rightarrow |x| = 1 \rightarrow x = \pm 1$$

$$h = \{(-1, -1), (-1, 0), (0, 0), (0, 1), (1, 1)\}$$

