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$$f(x) - x + 1 \geq 0 \quad \sqrt{x-1-x+1} = \sqrt{x} \geq 0 \quad (I)$$

$$\begin{cases} x-1 \geq 0 & (II) \\ x+1 \geq 0 & (III) \end{cases} \quad \sqrt{x+1-x+1} \geq 0 \rightarrow x \geq \frac{1}{2} \Rightarrow \frac{1}{2} \leq x < \infty$$

$$3x+2 > 0 \rightarrow x > -\frac{2}{3}$$

$$I \cap II = [1, \infty) \quad * \cup * * = \left[-\frac{2}{3}, \infty\right)$$

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$$\frac{1}{x^3} \rightarrow \Delta x^3 + 12x^2 + 4x + 1 = 3(x+1)^3 \quad (2) \quad (12)$$

$$\frac{3x^2 + 24x + 4}{(x+1)^2} \rightarrow \frac{3x^2 + 6x + 1}{(x+1)^2} = 0 \rightarrow x = -\frac{1}{2}$$

$$D_f = \mathbb{R} - \left\{-\frac{1}{2}\right\}$$

$$\frac{(n+1)(n-1)}{n^2+an+b} = \frac{n+1}{n-c} \rightarrow n^2+an+b = (n-1)(n-c) \quad (14)$$

$$n^2+an+b = n^2+(-c-1)n+c \quad (15)$$

$$b=c \quad -c-1=a \rightarrow a+c=-1$$

$$n=2 \rightarrow \frac{4}{2-c} = \frac{4}{4+a+b} \rightarrow 2-c = 4+a+b \quad (16)$$

$$2b+2a = -2 \rightarrow a+b = -1$$

$$f(x) = \begin{cases} n+1 & x \neq \pm 1 \\ \frac{a+1}{n+b} & x = \pm 1 \end{cases} \rightarrow n=1 \rightarrow \frac{2}{b+1} = \frac{a+1}{b+1} \rightarrow 2b+2=a+1 \quad (17)$$

$$n=-1 \rightarrow \frac{-a+1}{b-1} = 1 \rightarrow b-1 = -a+1 \rightarrow a-1 = -b+1$$

$$b = -a+1 \rightarrow 2b = -2a+2 \rightarrow 2a = 1 \rightarrow a = \frac{1}{2} \quad (18)$$

$$b = 0 \quad (19)$$

$$b+c = 1 \quad (20)$$

$$b+c = 1 \quad (21)$$

$$b+c = 1 \quad (22)$$

$$b+c = 1 \quad (23)$$

$$b+c = 1 \quad (24)$$

$$b+c = 1 \quad (25)$$



Senobar

$$f(n+1) = (n-2)^2(n) = \cancel{n^3} - \cancel{2n^2} + \cancel{2n}$$

$$f(1-n) = (-n-2)^2(-n) = -\cancel{n^3} - \cancel{4n^2} - \cancel{4n}$$

$$g(n) = -4n^2$$

$$1-2n = -1 \rightarrow n=1 \rightarrow \sqrt{1} = 1$$

$$1-2n = 3 \rightarrow n = -1 \rightarrow -1+2 = 1$$

$$n + \sqrt{n} = 4 \rightarrow n = 9 \rightarrow 9^2 + 3(9) = 81 + 27 = 108$$

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

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

$$\rightarrow f(n-1) + f(1-n) = 0$$

$$2f - g = \{(1, k)\} \rightarrow n=1 \rightarrow 2\sqrt{1-3a} + 2k-2 = f(n)$$

$$n=1 \rightarrow g(n) = \sqrt{b-1} + 2k$$

$$2f - g = 2\sqrt{1-3a} + 2k-2 - \sqrt{b-1} - 2k = k$$

$$2k + \sqrt{b-1} = 2\sqrt{1-3a}$$

$$2k^2 + b-1 + k^2\sqrt{b-1} = 4$$

صفحه آفر...

$$D_{f \times g} = [-1, 5]$$

$$2n+2 \geq 0 \rightarrow n \geq -1$$

$$m-n \geq 0 \rightarrow n \leq m \rightarrow m=1$$

$$n=3 \rightarrow f=2\sqrt{2}$$

$$g=2+n$$

$$2\sqrt{2}-2-n=4\sqrt{2} \rightarrow n = -2\sqrt{2}-2$$

$$m+n = 5 - 2\sqrt{2}$$

صفحه آفر...

$$D_f = \mathbb{R} - \{c\}$$

۴- چون دو تابع با هم برابرند دامنه‌های برابر داشته‌اند :

یعنی برای g در مخرج ریشه مضاعف داشته :

$$u^r + au + b = (u - c)^r = u^r - rcu + c^r \rightarrow \begin{cases} a = -rc \\ b = c^r \end{cases}$$

$$g(u) = f(u) \rightarrow$$

همچنین ضابطه‌های u/c دارند :

$$\frac{u^r - 1}{u^r + au + b} = \frac{u + 1}{u - c} \rightarrow \frac{(u - 1)(\cancel{u + 1})}{(u - c)^{\cancel{r}}} = \frac{\cancel{u + 1}}{\cancel{u - c}} \rightarrow \begin{cases} c = 1 \\ a = -2 \\ b = 1 \end{cases} \text{ جواب: } \boxed{5}$$

۹- اشتراک دامنه f و g فقط $u = 1$ است (یعنی)

$$D_f = \left[\frac{a}{r}, +\infty \right) \quad D_g = \left(-\infty, \frac{b}{r} \right] \xrightarrow{\cap} \{1\}$$

$$\frac{a}{r} = \frac{b}{r} = 1 \rightarrow a = \frac{r}{r} \quad b = r$$

$$rf(1) - g(1) = k \rightarrow 2k - r - rk = k \rightarrow k = -1$$

$$ra - \frac{b}{r} - k = \textcircled{3}$$

$$f(r) - g(r) = 4\sqrt{r} \rightarrow r + n - 2\sqrt{r} = 4\sqrt{r} \rightarrow n = 1\sqrt{r} - r \quad 10-$$

$$m + n = r + 1\sqrt{r} - r = \boxed{1 + \sqrt{r}}$$

