

۱) $f(n) = \sqrt{n+1}$ و $g(n) = n$ | $(x|n) \neq 0 \rightarrow Df = [0, +\infty) \rightarrow$ برابر نیست

$\Rightarrow f(n) = \frac{(n+3)(n+1) + n+2}{n^2 + 8n + 7}$ / $g(n) = 1$

$n^2 + 2n + 3 + n + 2 = n^2 + 8n + 7 \rightarrow$ $\frac{n^2 + 8n + 7}{n^2 + 8n + 7} = 1$ $\rightarrow$ برابر است

۲) $f(n) = 5 \sin^2 n - 4 \sin n$

$5 \sin n (5 \sin n - 4) \rightarrow 5 \sin n - 4 \neq 0 \rightarrow \sin n \neq \frac{4}{5}$ | $f(n) = \frac{n}{|n|}$ و $g(n) = \frac{|n|}{n}$ $\rightarrow$ برابر نیست
 $Df, g = (-\infty, 0) \cup (0, +\infty)$

۳) $f(n) = \left[\frac{n}{n+1} \right]$ و $g(n) = [n - [n]]$ $\rightarrow$ ~~برابر نیست~~

۴) $f(n) = \frac{1}{[n]}$ و $g(n) = \frac{1}{2[n]}$ $\rightarrow n = 1, 2 \rightarrow$ ~~برابر نیست~~

۵) $f(n) = \frac{1}{\sqrt{n-1}}$ و $g(n) = \frac{1}{\sqrt{|n|-n}}$
 $n-1 > 0 \rightarrow n > 1 \rightarrow Df = \phi$
 $|n| > n \rightarrow Dg = (-\infty, 0)$

۶) $f(n) = \frac{n^2 - n}{n-1} \rightarrow n \neq 1$ و $g(n) = n + n$
 $n=1 \rightarrow$ ~~برابر نیست~~

$f(n) + g(n) = n^2 + n + 1$ $\rightarrow$ $f \times g$

$f(n) - g(n) = n^2 - n + 1$

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

$\ominus \rightarrow 2g(n) = 2n \rightarrow g(n) = n$

$f \times g \rightarrow f(g(n)) \rightarrow f(n) \rightarrow n^2 + 1$

$f(n) = n - \sqrt{n^2 - 4}$ و $g(n) = n + \sqrt{n^2 - 4}$

دامنه و فصل

$(n - \sqrt{n^2 - 4})(n + \sqrt{n^2 - 4}) = n^2 - (n^2 - 4) = 4$

$f(n) = \frac{an^2}{n^2 + m + 1}$ و $g(n) = \frac{n-b}{n^2 + n - 8}$ $\rightarrow$ $(-1, 8) / x^2 + mx + n \rightarrow$ $\frac{a}{b} = \frac{m}{n}$

$(x^2 + 1)(n^2 - 8x - 8) = (n-b)(n^2 + m + 1)$ $\rightarrow$ $nan^2 + (-8a + 1)n^2 + (-8a - 4)n - 1$

$\rightarrow a = 1 \rightarrow a = \frac{1}{2}$

$-m - b = -8a + 1 \rightarrow -m - b = -4 + 1 \rightarrow m + b = -3$

$-8a - 4 = n + bm \rightarrow n + bm = -4 - 4 = -8$

$a = \frac{1}{2}$

$am = bn \rightarrow \left(\frac{1}{2} \times \frac{1}{2}\right) = 1 \rightarrow \left[\frac{-3}{-4}\right] = \frac{3}{4}$

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$$f(n) = \frac{bn+y}{n+y} \quad / \quad g(n) = c \quad / \quad Dg = \mathbb{R} - \{a\} \quad / \quad \frac{ab}{c} = ?$$

$$b \neq -b \rightarrow n \neq -\frac{b}{a}$$

$$\frac{bn+y}{n+y} = c \rightarrow bn+y = (n+y)c \rightarrow bc = b \rightarrow bc=y \rightarrow \wedge c \times c = y \rightarrow \wedge c^2 = y \rightarrow c^2 = \frac{1}{x} \rightarrow c = \pm \frac{1}{\sqrt{x}}$$

$$\left. \begin{array}{l} c = \frac{1}{\sqrt{x}} \rightarrow b = x \rightarrow a = \frac{1}{\sqrt{x}} \\ c = -\frac{1}{\sqrt{x}} \rightarrow b = -x \rightarrow a = \frac{1}{\sqrt{x}} \end{array} \right\} \frac{ab}{c} = \frac{x \cdot x}{\frac{1}{\sqrt{x}}} = x^2 \sqrt{x} = x^{\frac{5}{2}}$$

$$f \circ g = \{(1,1), (2,1), (3,-1), (4,1)\}$$

$$g = \{(1,1), (2,1), (3,-1), (4,1)\}$$

$$f \rightarrow \frac{f \circ g}{f \circ g}$$

$$+1 \rightarrow f = \{(1,1), (2,1), (3,-1), (4,1)\}$$

$$\frac{f \circ g}{f \circ g} \rightarrow \{(1,1), (2,1), (3,-1)\} \leftarrow \frac{1}{2}$$

$$f = \{(1,a), (2, a-2b), (3,a), (4,a)\} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} a+c=?$$

$$g = \{(1,-1), (2,1), (3,a-2b), (4,a)\}$$

$$a = -1 \quad / \quad d = -1 \quad / \quad a-2b = 1 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} -2b = 1 \rightarrow b = -\frac{1}{2}$$

$$a-2b \Rightarrow -1 - 2(-\frac{1}{2}) \Rightarrow -1 + 1 = 0 \rightarrow c = 0$$

$$f(n) = \sqrt{-n^2+n-m} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} a+b=?$$

$$g(n) = \{(a,b)\}$$

$$-n^2+n-m \geq 0 \rightarrow n^2-n+m \leq 0 \rightarrow \Delta = b^2-4ac \rightarrow (-1)^2 - 4(1 \times m) \rightarrow 1-4m \rightarrow n = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$a+b \rightarrow \frac{1+\sqrt{1-4m}}{2} + \frac{1-\sqrt{1-4m}}{2} \rightarrow \frac{2}{2} = 1$$

$$\left. \begin{array}{l} a = \frac{1+\sqrt{1-4m}}{2} \\ b = \frac{1-\sqrt{1-4m}}{2} \end{array} \right\} \frac{1 \pm \sqrt{1-4m}}{2}$$

$$\frac{y}{n+c} = \frac{yn+a}{n^2+4n+b} \rightarrow \Delta = 0 \rightarrow b^2-4ac = 0 \rightarrow 4n-4b = 0 \rightarrow b=4$$

$$n^2+4n+9 \rightarrow (n+2)^2 + 5 \rightarrow n \neq -2 \rightarrow c = -2$$

$$\frac{y}{n+2} = \frac{yn+a}{n^2+4n+9} \rightarrow yn+4 = yn+a \rightarrow a=4 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \frac{a+b+c}{4+9-2} = \frac{4+4-2}{11} = \frac{6}{11}$$