

19, 25

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱... کلاس: ۱۸:۳۰ - ۱۶:۳۰

الف) $D_{(f)} \neq D_{(g)} \Rightarrow$ برابر نیستند $\Rightarrow$ اصل ۱۱۵

ب) $D_{(f)} = D_{(g)} \quad f_n = \frac{n^2 + 4n + 3 + n + 1}{n^2 + 4n + 3} = 1 = g_n \Rightarrow$ برابرند $\Rightarrow$ اصل ۱۱۵

ج) $D_{(f)} = D_{(g)} \quad f(n) = \frac{r \sin n (\sin n - 3)}{r \sin n - 3} = r \sin n = g_n \Rightarrow$ برابرند $\Rightarrow$ اصل ۱۱۵

د) $D_{(f)} = D_{(g)} = \mathbb{R} - \{0\} \quad f = g = \begin{cases} 1 & n > 0 \\ -1 & n < 0 \end{cases} \Rightarrow$ برابرند $\Rightarrow$ اصل ۱۱۵

الف) $D_{(f)} = D_{(g)} \quad f(n) = g(n) = 0 \Rightarrow$ برابرند $\Rightarrow$ اصل ۱۱۷۵

ب) $D_{(f)} \neq D_{(g)} \Rightarrow$ برابر نیستند $\Rightarrow$ اصل ۱۱۷۵

ج) $D_{(f)} \neq D_{(g)} \Rightarrow$ برابر نیستند $\Rightarrow$ اصل ۱۱۷۵

د) $D_{(f)} = D_{(g)} = \mathbb{R} \quad \frac{n^2 - n}{n - 1} = n + 1, f(n) = g(n) = 2 \Rightarrow$ برابرند $\Rightarrow$ اصل ۱۱۷۵

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

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

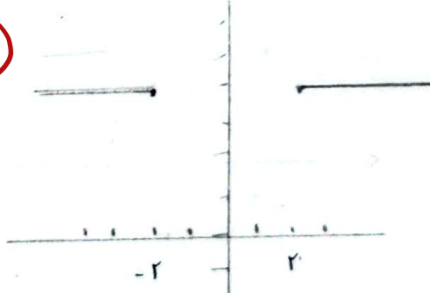
ج) $f(n) - g(n) = n^2 + n^2 + 1 - n = n^2 + n^2 + 1$

الف) $f \times g = n^2 - (n^2 - f) = f$

ب) $D = D_{(f)} \cap D_{(g)}$

ج) $n^2 - f > 0$

د) $D = (-\infty, -2] \cup [2, \infty)$

ه) 

الف) $f(n) = \frac{ran + f}{rn^2 - rnm + rn} \quad f(n) = g(n) \quad \frac{ran + f}{rn^2 - rnm + rn} = \frac{n - b}{rn^2 - rnm - a}$

ب) $ra = 1 \rightarrow a = \frac{1}{r}$

ج) $-b = f \rightarrow b = -f$

د) $-rm = -r \rightarrow m = \frac{r}{r}$

ه) $rn = -a \rightarrow n = -\frac{a}{r}$

و) $am - bn = \frac{1}{r} \times \frac{r}{r} - (-f \times (-\frac{a}{r})) = \frac{1}{r} - 1 = 9 \frac{1}{r}$

$D_{(f)} = D_{(g)} \rightarrow a = -\frac{b}{\lambda}$ $f_{(0)} = \frac{r}{b} \quad g_{(0)} = c \quad f_{(0)} = g_{(0)} \rightarrow \frac{r}{b} = c \quad (1)$ $f_{(1)} = \frac{b+r}{\lambda+b} = g_{(1)} = c \quad (2)$ $1 \Rightarrow \frac{b+r}{\lambda+b} = \frac{r}{b} \quad b^2 + r \cdot b = 1 \cdot b + r \cdot b \quad b = \pm 1$ $\frac{ab}{c} = \frac{-\frac{b}{\lambda} + b}{\frac{r}{b}} = -\frac{b}{1 \cdot r} \left[\begin{array}{l} b = 1 \Rightarrow -\frac{1}{1 \cdot r} = -\frac{1}{r} \\ b = -1 \Rightarrow -\frac{-1}{1 \cdot r} = \frac{1}{r} \end{array} \right]$	6
$f = \{(r-1, r), (r, r), (r, r-1), (0, \frac{1}{r})\} \quad D_{(f)} \cap D_{(g)} = \{r, r, -1\}$ $rg = \{(r, \lambda), (r, 1r), (-1, -\lambda), (0, 0)\}$ $\frac{rg}{f+g} = \{(r, \frac{\lambda}{r+r}), (r, \frac{1r}{-r+r}), (-1, \frac{-\lambda}{r-r})\}$ $R = \{1, r, r\}$	7
$a = d = -1 \quad a - rb = c$ $ra - rb = 1 \quad -r - rb = 1 \quad -r = rb \quad \underline{b = -1}$ $c = -1 + r = 0$ $d + c = -1 + 0 = -1$	8
$\Delta = 0 \quad (\text{ریشه مضاعف}) \quad 1 - fm = 0 \quad m = \frac{1}{r}$ $-n^2 + n - \frac{1}{r} = 0 \Rightarrow n = \frac{1}{r}$ $f(\frac{1}{r}) = 0 \quad (\frac{1}{r}, 0) \rightarrow a = \frac{1}{r}, b = 0$ $\underline{a+b = \frac{1}{r}}$	9
$D_{(f)} = D_{(g)} \rightarrow (n-c)^2 = n^2 + 9n + b \quad n^2 - rcn + c^2 = n^2 + 9n + b$ $-rc = 9 \rightarrow \underline{c = -9} \quad b = c^2 \rightarrow \underline{b = 81}$ $f_{(0)} = g_{(0)} \quad \frac{a}{b} = \frac{r}{-c} \rightarrow \frac{a}{9} = \frac{r}{9} \quad \underline{a = r}$ $a+b+c = r+9-9 = \underline{r}$	10