

نام و نام خانوادگی سروش اخوان ۲۰ پاسنامه تشریحی تکلیف شماره ۸۰۰ کلاس ۱۰م پسر B

الف) $f(u) = \sqrt{u^2 + 1}$, $g(u) = u$ $u \in \mathbb{R}$ $\Rightarrow D_f = [0, +\infty)$

$D_g = \mathbb{R} \Rightarrow D_f = D_g = \mathbb{R}$ $\Rightarrow$ برابرند $\Rightarrow$ این تابع برابر نیستند $\Rightarrow D_f = D_g = \mathbb{R}$

ب) $f(u) = \frac{(u+3)(u+1)+u+3}{u^2+8u+15}$, $g(u) = \frac{u^2+8u+15}{u^2+8u+15}$ $\Rightarrow f(u) = 1$, $g(u) = 1$ $\Rightarrow D_f = D_g = \mathbb{R}$ برابرند

ج) $f(u) = \frac{2 \sin u (2 \sin u - 2)}{2 \sin u - 2}$, $g(u) = 2 \sin u$ $\Rightarrow f(u) = 2 \sin u$, $g(u) = 2 \sin u$ $\Rightarrow D_f = D_g = \mathbb{R}$ برابرند

همیشه برقرار است $\Rightarrow 2 \sin u - 2 \neq 0 \Rightarrow 2 \sin u \neq 2 \Rightarrow \sin u \neq 1$

د) $f(u) = \left[\frac{u^2}{u^2+1} \right]$, $g(u) = [u - [u]]$ $\Rightarrow D_f = D_g = \mathbb{R}$ برابرند $\Rightarrow D_f = D_g = \mathbb{R}$

ه) $f(u) = \frac{1}{[u]}$, $g(u) = \frac{1}{2[u]}$ $\Rightarrow D_f = D_g = \mathbb{R} - \{0\}$ برابرند

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$\frac{bx+r}{\Lambda x+b} = c \quad bx+r = \Lambda cx + bc \Rightarrow bc = r, bx = \Lambda cx$ $\Rightarrow b = \Lambda c \quad , b = \frac{r}{c} \Rightarrow c^2 = \frac{1}{r} \rightarrow c = \pm \frac{1}{\sqrt{r}}$ $\Rightarrow b = \sqrt{r}, -\sqrt{r}$ $\Lambda x + b \neq 0 \quad \Lambda x \neq -b \Rightarrow x \neq -\frac{b}{\Lambda} \quad , a = \frac{r}{\Lambda} = \frac{1}{r}$ $a = \frac{r}{\Lambda} = \frac{1}{r} \Rightarrow \frac{ab}{c} = \sqrt{r}, -\sqrt{r}$	6
$f = \{(r, r), (r, r), (r, -r), (0, \frac{1}{r})\}$ $g = \{(r, r), (r, r), (-1, -r), (0, 0)\}$ $\Rightarrow \frac{fg}{f+g} = \{(r, 1), (r, r), (-1, r)\}$ $\Rightarrow \{1, r, r\} = \mathcal{E} \cdot \mathcal{F}$	7
$f = \{(r, a), (-r, ra - rb), (c, d), (r, d)\}$ $g = \{(r, -1), (-r, 1), (a - rb, r)\}$ $a = d = (-1) \quad ra - rb = 1 \Rightarrow -r - rb = 1$ $\Rightarrow rb = -r \Rightarrow b = -1 \quad a - rb = c \Rightarrow -1 + r = d$ $\Rightarrow d + c = -1 + r = r$	8
$u^r = u + m \sqrt{r}$ $b^r = \varepsilon ac = 1 - \varepsilon m = 0 \Rightarrow b \neq \frac{1}{r} \Rightarrow \Delta = 0$ $, m = \frac{1}{r} \left\{ \begin{array}{l} u^r = u + \frac{1}{r} = 0 \Rightarrow (u - \frac{1}{r})^r = 0 \\ \Rightarrow u = \frac{1}{r} \quad , f(u) = 0 \end{array} \right.$ $a + b = \frac{1}{r} + 0 = \frac{1}{r}$	9
$f(x) = \frac{rx+a}{u^r+9u+b} = g(x) = \frac{r}{u-c} = f(x) = \frac{rx+a}{(\frac{au+r}{r})(u-c)} \Rightarrow Pf = R - \{c, -\frac{a}{r}\}$ $Pg = R - \{c\} \quad f(x) = g(x) \Rightarrow Pf = Pg \Rightarrow c = -\frac{a}{r}$ $r(u+a)(u-c) = ru^r + ru + rb \Rightarrow ru^r + (a-rc) = -ac$ $= ru^r + ru + rb \Rightarrow a - rc = 1r \Rightarrow a = 1r + rc$ $a + b = 1r$	10

$$-ac - rb \Rightarrow b = \frac{-ac}{r} = \frac{-rc^2 - 1rc}{r} \Rightarrow b = c^2 - rc, a = -rc = rc + 1r$$

$$\Rightarrow -rc = 1r \Rightarrow (c = -r) \quad a + b + c = (rc + 1r) + (-c^2 - rc) + c = 1r - c^2$$