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نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس

الف) $D_f = x \geq 0$ $D_g = \mathbb{R}$ $D_f \neq D_g$ $f(x) \neq g(x)$ ✓

مستند ب نوشته نشد

ج) $2 \sin x - 3 \neq 0$ $2 \sin x \neq 3$ $\sin x \neq \frac{3}{2}$ ✓
 $x = \frac{\pi}{2}$ $\sin x = \frac{1}{2}$ $\frac{(2 \times \frac{1}{2}) - 3}{(2 \times \frac{1}{2}) - 3} = (2 \times \frac{1}{2})$ $f(n) = g(n)$
 د) $D_f = D_g = \mathbb{R} - \{0\}$ $f(n) = g(n)$ ✓

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الف) $D_f = D_g = \mathbb{R}$ $f(n) = g(n)$

ب) $D_f = [2x] \neq 0$ $x \in [0, \frac{1}{2})$ $D_g = 2[x] \neq 0$ $[x] \neq 0$ $x \in [0, 1]$ $D_f \neq D_g$
 $f(n) \neq g(n)$

ج) $D_f = x > |x| \rightarrow D_f = \emptyset$ $g(n) = |n| > x \rightarrow D_f = \mathbb{R}^-$ $D_f \neq D_g$ $f(n) \neq g(n)$

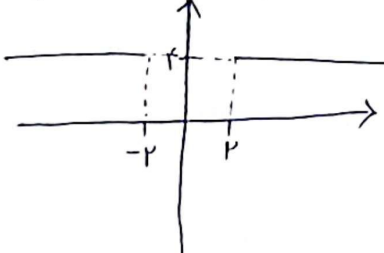
د) $\frac{n(n-1)(n+1)}{(n-1)} = n(n+1) = n^2 + n \xrightarrow{n \neq 1} f(n) = n^2 + n = g(n)$ $f(n) = g(n)$
 $n=1 \rightarrow f(1)=2$ $g(1)=2$ ✓

$f^2 - g^2 = (f-g)(f+g) \rightarrow f(n)^2 - g(n)^2 = (n^2 - n + 1)(n^2 + n + 1)$
 $f = \frac{(f+g) + (f-g)}{2} = \frac{(n^2 + n + 1) + (n^2 - n + 1)}{2} = \frac{2n^2 + 2}{2} = n^2 + 1 = f(n)$
 $g = \frac{(f+g) - (f-g)}{2} = \frac{(n^2 + n + 1) - (n^2 - n + 1)}{2} = \frac{2n}{2} = n = g(n)$

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

$n^2 - 4 \geq 0 \rightarrow |n| \geq 2 \rightarrow n \leq -2$ یا $n \geq 2$



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$$\frac{x-b}{r x^2 - r x - \omega} = \frac{a x + r}{\underbrace{x^2 - m x + n}_{\lambda r}}$$

Q (2)

$$\frac{x-b}{r x^2 - r x - \omega} = \frac{r a x + r}{r x^2 - r m x + r n} \Rightarrow r a = 1 \rightarrow a = \frac{1}{r}$$

$$b = -r$$

$$\left(\frac{1}{r} x - r \right) - \left(-r x - \frac{\omega}{r} \right) = \frac{-r \sqrt{r}}{r}$$

$10 = \frac{r}{r}$

$$m = \frac{2}{r}$$

$$n = -\frac{3}{r}$$

$bx + y = c (ax + b)$ $x: b = ac$ $y = bc \rightarrow y = (ac)c$ $y = \hat{A}c$ $c = \pm \frac{1}{r} \quad c < \begin{cases} \frac{1}{r} \rightarrow b = r \\ -\frac{1}{r} \rightarrow b = -r \end{cases}$ $ax + b = 0 \Rightarrow x = -\frac{b}{a} \quad b < \begin{cases} r \rightarrow a = -\frac{1}{r} \\ -r \rightarrow a = \frac{1}{r} \end{cases}$	$\frac{ab}{c}: 1) b = r, c = \frac{1}{r}, a = -\frac{1}{r} = \frac{(-\frac{1}{r})(r)}{\frac{1}{r}} = -r^2$ $2) b = -r, c = -\frac{1}{r}, a = \frac{1}{r} = \frac{(\frac{1}{r})(-r)}{-\frac{1}{r}} = r$ $\frac{ab}{c} \in \{-1, r^2\}$	6
$r\mathcal{F} = \{(-1, r), (r, 1), (r, -r), (0, 1)\}$ $\mathcal{F} = \{(-1, r), (r, r), (r, -r), (0, \frac{1}{r})\}$ $r\mathcal{G} = \{(r, 1), (r, r), (-1, -1), (\omega, 0)\}$ $\mathcal{F} + \mathcal{G} = \{(-1, -r), (r, 1), (r, r)\}$ $\frac{r\mathcal{G}}{\mathcal{F} + \mathcal{G}} = \{(-1, r), (r, 1), (r, \frac{1}{r})\}$	$R_{\frac{r\mathcal{G}}{\mathcal{F} + \mathcal{G}}} = \{r, 1, r^2\}$	7
$(r, -1) = (r, a) \rightarrow a = -1 \quad (r, a) = (r, d) \quad a = d \quad d = -1$ $(-r, 1) = (-r, ra - rb) \quad ra - rb = 1 \Rightarrow -r - rb = 1 \quad b = -r$ $(a - rb, \omega) = (c, \omega) \quad a - rb = c \quad c = \omega$ $d + c = \omega - 1 = r$		8
$\sqrt{-(a^2 - a + m)} = \sqrt{-(a^2 - a + m)} = 0 \Rightarrow \sqrt{-(a - \frac{1}{r})^2} = 0$ $\Delta = 1 - 4m = 0$ $\frac{1}{r} = m$	چون یک نقطه در خواصه ریشه مفاد $\Delta = 0$ $a = \frac{1}{r} \quad a + b = \frac{1}{r} + 0 = \frac{1}{r}$ $b = 0$	9
$\frac{r}{x - c} = \frac{rx + a}{x^2 + 4x + b} \hookrightarrow \frac{r}{x - c} > (x + r)^r \hookrightarrow \mathcal{P} = \{1, 2, 3\}$ $\Rightarrow x + r \quad c = -r \quad b = 9$ $\frac{r}{(x + r)} = \frac{rx + a}{(x + r)^2}$ $a + b + c = 1r$	$r(x + r)(\cancel{x + r}) = (rx + a)(\cancel{x + r})$ $rx + 4 = rx + a$ $a = 4$	10