

۱۲, ۵۵

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ... کلاس ...

الف) $f(x) = \sqrt{x|x|}$, $g(x) = x \Rightarrow x|x| \geq 0 \Rightarrow$
 $\begin{matrix} \oplus \oplus = \oplus \\ \oplus \oplus = \oplus \\ \oplus \oplus = \oplus \end{matrix}$
 $\downarrow$
 $\mathbb{R}$
 $\leftarrow x$ برابر است

ب) $f(x) = \frac{(x+2)(x+1)+x+1}{x^2+5x+6}$, $g(x) = 1$
 $x^2+2x+3+x+1 \Rightarrow x^2+3x+4$
 $\frac{x^2+3x+4}{x^2+5x+6} \mathbb{R}$
 $g(x) = 1 \Rightarrow$ ~~برابر نیست~~

ج) $f(x) = \frac{2\sin x - \sin 2x}{2\sin x - 1}$, $g(x) = 2\sin x$
 $\frac{2\sin x(1 - \cos 2x)}{2\sin x - 1} = 2\sin x$
 $\frac{1 - \cos 2x}{2\sin x - 1} = 1$
 $1 - \cos 2x = 2\sin x - 1$
 $2 = 2\sin x$
 $\sin x = 1$
 $x = \frac{\pi}{2} + 2k\pi$

د) $f(x) = \frac{x}{|x|}$, $g(x) = \frac{|x|}{x}$
 $|x| \neq 0, x \neq 0 \Rightarrow$ ~~برابر نیست~~
 $\checkmark$ درست بود پس

الف) $f(x) = \left[\frac{x}{x+1} \right]$, $g(x) = [x - [x]]$
 $\frac{1}{1+1} = \frac{1}{2}$
 $\left[\frac{1}{2} \right] = 0$
 $1 - [1] = 0$
 $\left[\frac{1}{2} - [1] \right] = \left[-\frac{1}{2} \right] = -1$
 $\left[\frac{1}{2} \right] \neq [1 - 1]$
 $\left[\frac{1}{2} \right] \neq 0$
 $\left[-\frac{1}{2} \right] = -1$
 $\left[\frac{1}{2} \right] \neq -1$

ب) $f(x) = \frac{1}{[x]}$, $g(x) = \frac{1}{\{x\}}$
 $\frac{1}{1} \neq \frac{1}{\frac{1}{2}}$
 $\frac{1}{1} \neq 2$
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 $\frac{1}{1} \neq 2$
 $\frac{1}{1} \neq \frac{1}{\frac{1}{2}}$
 $\frac{1}{1} \neq 2$

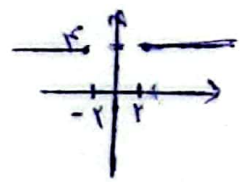
ج) $\frac{1}{\sqrt{x-1}}$, $\frac{1}{\sqrt{x}}$
 $\frac{1}{\sqrt{x-1}} > \frac{1}{\sqrt{x}} \Rightarrow x-1 < x \Rightarrow -1 < 0$
 $\frac{1}{\sqrt{x-1}} < \frac{1}{\sqrt{x}} \Rightarrow x-1 > x \Rightarrow -1 > 0$
 $\frac{1}{\sqrt{x-1}} = \frac{1}{\sqrt{x}} \Rightarrow x-1 = x \Rightarrow -1 = 0$
 $\leftarrow$ برابر نیست

د) $\frac{x-2}{x-1} = 1 \Rightarrow x-2 = x-1 \Rightarrow -2 = -1$
 $\frac{x-2}{x-1} = 1 \Rightarrow x-2 = x-1 \Rightarrow -2 = -1$
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$(f+g) + (f-g) = 2f = 2x^2 + 1 = x^2 + 1 = f(x)$
 $(f+g) - (f-g) = 2g = 2x \Rightarrow g(x) = x$

$x^2 + 2x^2 + 1 - x^2 =$
 $2x^2 + 1$
 $2x^2 + 1 = x^2 + 1$
 $x^2 = 0$
 $x = 0$

$f(x) = x - \sqrt{x^2 - 4}$, $g(x) = x + \sqrt{x^2 - 4} \Rightarrow (a+b)(a-b) = a^2 - b^2$
 $\Rightarrow x^2 - |x^2 - 4| = 4 \Rightarrow x + \sqrt{x^2 - 4} = 4 \Rightarrow x^2 - 4 \geq 0 \Rightarrow x^2 \geq 4$
 $\Rightarrow x \geq 2, x \leq -2$



$f(x) = \frac{ax+b}{x^2+mx+n}$, $g(x) = \frac{x-b}{x^2+px+q}$
 $(2x-5)(x+1) = 2x^2 + 2x - 5x - 5 = 2x^2 - 3x - 5$
 $2x^2 - 3x - 5 = 2x^2 - 3x - 5 \Rightarrow 2x + 1 = x - b \Rightarrow$
 $x^2 - mx + n \Rightarrow m = 1/5, n = -1/5$
 $a=1, b=-5 \Rightarrow$
 $\Rightarrow 1/5 - 5 = -24/5$

am - bn?

0

f

0

v

$$a = -1 / 2a - 2b = 1 \Rightarrow -2b = 3 \Rightarrow d = -1 / -b = 2 \Rightarrow b = -2$$

$$e - 3b = c \Rightarrow -1 + 6 \Rightarrow c = c \Rightarrow d + c = 5$$

u

h

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$$f = g \Rightarrow \frac{(1x + a)}{2x^2 + 5x + b} = \frac{y}{x - c} \Rightarrow \frac{(1x + a)(x - c)}{2x^2 + 5x + b} = \frac{y(x^2 + 5x + b)}{x^2 + 5x + b}$$

$$a = 1y + 2c \rightarrow 1x + 2c = 2b \rightarrow b = -5c - c \Rightarrow x^2 + 5x + b = k(x - c)$$

$$c = -3$$

$$a = 1y + 2(-3) = 1y - 6 = 9$$

$$b = -5(3) - (-3) = -15 + 3 = -12 \Rightarrow a + b + c = 9$$

u

$$c = -3$$

1.