

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۶ کلاس: **دهم پسر B**

$$\begin{aligned} 2f(5) &= f(-2) + a & 2(a+1)(7) &= 3a - 4 + a & 14(a+1) &= 4a - 4 \\ 10a &= -18 & a &= -18/10 \end{aligned}$$

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پس از آنکه از متوجه تعمیم کردید از مقدارها برابر a و یکی $\frac{1}{a}$ است.

$$f(x) = \sqrt{x} + \frac{1}{\sqrt{x}} + 2$$

$$\begin{aligned} f(2+\sqrt{2}) &= \sqrt{2+\sqrt{2}} + \sqrt{2-\sqrt{2}} + 2 \\ f(2-\sqrt{2}) &= \sqrt{2-\sqrt{2}} + \sqrt{2+\sqrt{2}} + 2 \end{aligned} \Rightarrow \begin{aligned} &f(2+\sqrt{2}) + f(2-\sqrt{2}) \\ &= 2(\sqrt{2+\sqrt{2}} + \sqrt{2-\sqrt{2}}) + 4 \\ &\Rightarrow 2\sqrt{6} + 4 \end{aligned}$$

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$$\begin{aligned} \left. \begin{aligned} 2f(-x) - 2f(a) &= x + 4a^2 \\ 2f(a) - 2f(-x) &= 4a^2 + x \end{aligned} \right\} \Rightarrow \begin{aligned} 2f(x) - 2f(-x) &= 4x^2 - x \\ 3f(-x) - \frac{9}{4}f(a) &= 4x^2 + \frac{9}{4}x \end{aligned}$$

$$10x^2 + \frac{1}{4}x = \frac{9}{4}f(x) \Rightarrow f(x) = -4x^2 - \frac{1}{8}x$$

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$$\begin{aligned} x=0 &\rightarrow 2f(0) = 3m-1 \rightarrow 4f(0) = 9m-2 \rightarrow 9m-2 = 5m+15 \\ x=-2 &\rightarrow 4f(0) = 14+5m-1 \Rightarrow 4f(0) = 5m+15 \end{aligned} \Rightarrow m = \frac{11}{4}$$

$$2f(0) = 3 \times \frac{11}{4} - 1 \Rightarrow f(0) = \frac{11}{8}$$

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$$ax+b + \frac{a}{x} + b = 3x - 12 + \frac{c}{x} \rightarrow a=3, b=-6$$

$$f(x) = 3x - 12 \Rightarrow f(-1) = 3(-1) - 12 = -15$$

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$1-x \geq 0 \Rightarrow D_f = (-\infty, 1]$ $(1-x)^c \geq 0 \Rightarrow D_g = (-\infty, 1]$	$D_f = D_g \Rightarrow f(x) = g(x)$	٦
$f(x) = x\sqrt{x} \rightarrow x \geq 0 \Rightarrow D_f = \mathbb{R}^+ \cup \{0\}$ $g(x) = \sqrt{x^3} \rightarrow x^3 \geq 0 \Rightarrow D_g = \mathbb{R}^+ \cup \{0\}$ $x \leq 2 \rightarrow \sqrt{x}$	$f(x) = g(x)$	٧
$D_f = \mathbb{R}^+ \cup \{0\}$	$x = x \geq 0 \Rightarrow x \geq x \rightarrow x \geq 0 \Rightarrow D_g = [0, \infty)$ $f(x) = 0$	٨
$g(x) \rightarrow x = x \leq 0 \Rightarrow x \leq 0$	$f(x) = g(x)$	٩
الف) $\left(\frac{f+g}{f-g}\right)(1) = \frac{f(1)+g(1)}{f(1)-g(1)} = \frac{2+1}{2-1} = 3$ $\rightarrow = \frac{f(2)+g(2)}{f(2)-g(2)} = \frac{5-1}{5-1} = 1$ ج. $f(1)g(-1) = 2 \times 1 = 2$		١٠
الف) $g(x) = f(2x-1) \rightarrow g(x) = \left\{ (1,1), (0,1), \left(\frac{1}{2}, 0\right), \left(-\frac{1}{2}, 1\right), \left(\frac{3}{2}, -1\right) \right\}$ ب. $h(x) = f(x) \rightarrow h(x) = \left\{ (2,1), (-2,1), (0,0), (1,-1), (-1,-1) \right\}$		