

ناتوانی گیری	تکلیف شماره ۵	کلاسی یازدهم دختر A
۱	الف) $\frac{x-1}{x} - \frac{x}{x-1} \geq 0 \Rightarrow \frac{(x-1)^2 - x^2}{x(x-1)} \geq 0 \Rightarrow \frac{-2x+1}{x(x-1)} \geq 0 \Rightarrow \frac{1}{1+\frac{1}{x}} - \frac{1}{\frac{1}{x}+1} -$ $1Df \Rightarrow (-\infty, 0) \cup [\frac{1}{2}, 1)$ ب) $x \neq 1, 0, -1, -2$ کسر که مخرج آن صفر شود، تعریف نشده است، پس: $\frac{x}{x-1} + \frac{1}{x+2} \neq 0 \Rightarrow \frac{x(x+2) + (x-1)}{(x-1)(x+2)} \neq 0 \Rightarrow 2x+1 \neq 0 \Rightarrow x \neq -\frac{1}{2}$ $1Df = \mathbb{R} - \{1, 0, -1, -2, -\frac{1}{2}\}$	
۲	الف) $(\frac{1}{x})^x - 9 \geq 0 \Rightarrow x = -2$، صفر می شود، پس: $1Df = (-\infty, -2] \cup [\frac{1}{9}, +\infty)$ ب) $(\sqrt{y+1}) = (9 - \sqrt{x-1}) \Rightarrow y+1 = 9 + \sqrt{x-1} - 9\sqrt{x-1} \Rightarrow$ $y = 8 + \sqrt{x-1} - 9\sqrt{x-1} \Rightarrow x-1 \geq 0 \Rightarrow \boxed{x \geq 1}$	
۳	$\log \frac{(x^2-x-2)}{x^2-1} + 1 \Rightarrow x^2-x-2 > 0 \Rightarrow (x+1)(x-2) > 0 \Rightarrow \frac{-1}{1+\frac{1}{x}} - \frac{2}{\frac{1}{x}+1} +$ $1Df = (-\infty, -1) \cup (2, +\infty) \quad (1)$ $\sqrt{x^2-1} \geq 0 \Rightarrow x^2-1 \geq 0 \Rightarrow x^2 \geq 1 \Rightarrow \begin{cases} x \geq 1 \\ x \leq -1 \end{cases} \quad (2)$ $\sqrt{x^2-1} + 1 \neq 0 \Rightarrow \sqrt{x^2-1} \neq -1 \Rightarrow 1Df = \mathbb{R} \quad (3)$ $Df = 1 \cap 2 \cap 3 \Rightarrow (-\infty, -1) \cup (2, +\infty)$	
۴	$x^2 + ax - x^2 \Rightarrow 3 - 2a - 4 = 0 \Rightarrow a = -\frac{1}{2} \Rightarrow 3 - \frac{1}{2}x - x^2$ $x^2 + \frac{1}{2}x - 3 \leq 0 \Rightarrow \Delta \Rightarrow \frac{19}{4} \Rightarrow \boxed{[-2, \frac{5}{2}]}$ $\frac{-2}{1+\frac{1}{x}} - \frac{5}{\frac{1}{x}+1} \Rightarrow 1Df = [-2, \frac{5}{2}] \Rightarrow \boxed{b = \frac{5}{2}}$ $a + b = -\frac{1}{2} + \frac{5}{2} = \frac{4}{2} = 2 \quad (1)$	
۵	$f(x) \geq x \quad \begin{cases} x \geq 1 \Rightarrow 2x-2 \geq x \Rightarrow x \geq 2 \quad (5) \\ x < 1 \Rightarrow 2x+3 \geq x \Rightarrow x \geq -3 \quad (6) \end{cases}$ $I \cap 2 \Rightarrow (2, +\infty) \quad I$ $3 \cap 4 \Rightarrow [-3, 1) \quad II$ $I \cap II \Rightarrow \emptyset$	

$$vf(a) = f(-v) + a \Rightarrow v((a+1)(v)) = ea - e + a$$

$$v(va+v) = ea - e \Rightarrow 1ea + 1e = ea - e$$

$$10a = -11 \Rightarrow a = \frac{-11}{10} \Rightarrow \boxed{a = -1.1}$$

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$$\sqrt{v-v} + \frac{1}{\sqrt{v-v}} + \sqrt{v+v} + \frac{1}{\sqrt{v+v}} + v \Rightarrow \left(\sqrt{v-v} + \frac{1}{\sqrt{v-v}} \right)^2$$

$$\sqrt{v-v} + \sqrt{v+v} + \sqrt{v+v} + \sqrt{v-v} \Rightarrow$$

$$v\sqrt{v+v} + v\sqrt{v-v}$$

V

$$vf(x) - ef(-x) = ex^2 - x \Rightarrow ef(x) - vf(-x) = 11x^2 - vx$$

$$vf(-x) - ef(x) = ex^2 + x \Rightarrow vf(-x) - ef(x) = vx^2 + ex$$

$$-ef(x) = vx^2 + x$$

$$\boxed{f(x) = -10x^2 - \frac{x}{v}}$$

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$$ef(0) = e(-v) - m(-v) + em - 1$$

$$ef(0) = 1v + dm - 1$$

$$f(0) \Rightarrow \frac{1d + dm}{v} = \frac{em + 1}{v} \Rightarrow \boxed{f(0) = 0}$$

$$e_0 + 10m = 11m + v \Rightarrow vf = 11m \Rightarrow \boxed{m = v}$$

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$$f(x) + f\left(\frac{1}{x}\right) = \frac{ex^2 - vx + v}{x} \Rightarrow ax + b + \frac{a}{x} + b = \frac{ex^2 - vx + v}{x}$$

$$ax + \frac{a}{x} + vb = vx - vx + \frac{v}{x} \begin{cases} a = v \\ b = -v \end{cases} \Rightarrow f(x) = vx - v$$

$$f(-1) = v(-1) - v = \boxed{-9}$$

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