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نام و نام خانوادگی: نام: پاسخنامه تشریحی تکلیف شماره ۴ ... کلاس ۱۱.A

$$\text{الف) } \frac{x-1}{x} - \frac{x}{x-1} \geq 0 \rightarrow \frac{(x-1)^2 - x^2}{x^2 - x} \geq 0 \rightarrow \frac{-2x+1}{x(x-1)} \geq 0 \rightarrow x \leq \frac{1}{2}, 0, 1$$

$$D_f \leq (-\infty, 0) \cup [\frac{1}{2}, 1)$$

$$\text{ب) } x \neq -1, x \neq 0, \frac{w}{x-1} + \frac{1}{x+2} \neq 0 \rightarrow \frac{w}{x-1} \neq -\frac{1}{x+2} \rightarrow wx+4 \neq -x+1 \rightarrow x \neq -\infty, x \neq -\frac{5}{f}$$

$$x \neq 1, x \neq -2 \Rightarrow D_f \leq \mathbb{R} - \{-2, -\frac{5}{f}, -1, 0, 1\}$$

$$\text{الف) } (\frac{1}{w})^x - 9 \geq 0 \quad (32 - 4^x) \geq 0 \quad (\frac{1}{w})^x - (\frac{1}{w})^{-2} \geq 0 \rightarrow (\frac{1}{w})^x = (\frac{1}{w})^{-2}, x = -2$$

$$32 = 4^{-2x} \rightarrow 4^{\omega} = 4^{-2x}, \omega = 2x, x = \frac{\omega}{2} \quad \frac{x-2}{1+\frac{1}{2}-\frac{1}{2}} \quad D_f \leq (-\infty, -2] \cup [\frac{5}{2}, +\infty)$$

$$\text{ب) } \sqrt{y+1} = 3 - \sqrt{x-1} \xrightarrow{\text{بهاره}} y+1 \leq (3 - \sqrt{x-1})^2 \rightarrow y = (3 - \sqrt{x-1})^2 - 1 \rightarrow x-1 \geq 0, x \geq 1$$

$$D_f \leq [1, +\infty)$$

$$\log_f (x^2 - x - 2) \rightarrow x^2 - x - 2 > 0, \Delta = 9, x = -1, 2. \quad \frac{x-1}{1+\frac{1}{2}-\frac{1}{2}} \rightarrow (-\infty, -1) \cup (2, +\infty) \textcircled{1}$$

$$\sqrt{x^2-1} + 1 \neq 0 \rightarrow \sqrt{x^2-1} \neq -1 \quad \text{هستند برقرار} \rightarrow \mathbb{R} \textcircled{2} \Rightarrow D_f = \textcircled{1} \cap \textcircled{2} \leq (-\infty, -1) \cup (2, +\infty)$$

$$3 + ax - x^2 \geq 0 \xrightarrow{x=-2} -4 - 2a + 3 = 0, -2a = 1, a = -\frac{1}{2}$$

$$a = -\frac{1}{2} \rightarrow -x^2 - \frac{1}{2}x + 3 \geq 0, \Delta \leq \frac{49}{4}, x = -2, \frac{w}{p} \Rightarrow b = \frac{w}{p}$$

$$a+b = -\frac{1}{2} + \frac{w}{p} = \frac{p}{p} = 1$$

$$f(x) - x \geq 0 \rightarrow f(x) \geq x \xrightarrow{x \geq 1} 3x-2 \geq x, 2x \geq 2, x \geq 1 \textcircled{1}$$

$$\xrightarrow{x < 1} 2x+3 \geq x, x \geq -3 \textcircled{2} \quad D_g \leq \textcircled{1} \cup \textcircled{2} = [-3, +\infty)$$

$$\left. \begin{aligned} f(\omega) &= (a+1)(\omega+2) = Va+V \\ f(-2) &= 3a-1 \end{aligned} \right\} \begin{aligned} V(Va+V) &= 3a-1+a \rightarrow 1fa-fa = -1-1f \\ f(-2) &= 3a-1 \end{aligned}$$

$$10a = -11, a = -1,1$$

$$(2-\sqrt{3})(2+\sqrt{3}) = 1 \rightarrow 2-\sqrt{3} = \frac{1}{2+\sqrt{3}}$$

$$\sqrt{2-\sqrt{3}} + \frac{1}{\sqrt{2-\sqrt{3}}} + \sqrt{2+\sqrt{3}} + \frac{1}{\sqrt{2+\sqrt{3}}} + 1 \leq 2(\sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}}) + 1$$

$$(\sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}})^2 \leq 2 + \sqrt{3} + 2\sqrt{3} + 2(2+\sqrt{3})(2-\sqrt{3}) = 4$$

$$\Rightarrow \sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}} \leq \sqrt{4} \Rightarrow f(2-\sqrt{3}) + f(2+\sqrt{3}) = 2\sqrt{4} + 1$$

$$f(x) \rightarrow 2f(x) - 3f(-x) = (x^2 - x) \times 2 \rightarrow 4f(x) - 9f(-x) = 11x^2 - 2x$$

$$f(-x) \rightarrow 2f(-x) - 3f(x) = (x^2 + x) \times 2 \rightarrow 4f(-x) - 9f(x) = 11x^2 + 2x$$

$$\Rightarrow -\Delta f(x) \leq 10x^2 + x \rightarrow f(x) \leq \frac{10x^2 + x}{-\Delta}$$

$$f(-2) \Rightarrow (-2+1)f(-2) - 3(-2) f(0) = 14 + 4m + 3m - 1 \rightarrow 4f(0) \leq 1\Delta + \Delta m$$

$$f(0) \leq \frac{1\Delta + \Delta m}{4}$$

$$f(0) \Rightarrow 2f(0) = 3m - 1 \rightarrow f(0) = \frac{3m-1}{2} \Rightarrow \frac{1\Delta + \Delta m}{4} \leq \frac{3m-1}{2}, \Delta m = 34, m = 5\Delta$$

$$f(0) \leq \frac{3(5\Delta)-1}{2} = \frac{15\Delta-1}{2} \leq 4, 15\Delta$$

$$f(-1) \rightarrow f(-1) + f(-1) = \frac{3+12+3}{-1} \leq -11$$

$$2f(-1) = -11, f(-1) \leq -5,5$$

$$x-1 \geq 0 \rightarrow x \geq 1$$

$$x = \sqrt{x-1} + \sqrt{y+1} \rightarrow x \leq 1, y \leq 1 \rightarrow D_f = [1, 1]$$