Subject: Year: Month: Date:

۱۷,۵

مهدی کرباسچیان _ تکلیف شماره ۷

۱ (۲)

$y = -\frac{1}{3}x^2 + \frac{2}{5}x + 1 \to x = \frac{3}{5} \to x' = 4 \Rightarrow (x - \frac{17}{5})$

$4 - \frac{3}{5} = \frac{17}{5}$

$y_{\text{رأس}} = \frac{\frac{28}{25}}{\frac{-1}{3}} = \frac{28}{25} \to y' = 3 \Rightarrow y + \frac{47}{25}$; $y' = -\frac{1}{3}x^2 + \frac{8}{3}x - \frac{7}{3}$

$\Rightarrow x_1 = 1$

$x_2 = 7$

۲ (۲)

$x_{max} = 1$ و $y_{max} = 4 \to (1, 4) \to f(x) = -(x-3)(x+1)$

$1 - 2f(3x+2) = 1 + 2(3x-1)(3x+3) = 18x^2 + 12x - 5$

$\to x_{max} = \frac{-1}{3}$, $y_{max} = -7$ $A(\frac{-1}{3}, -7) \to \frac{-1}{3} \times -7 = \frac{7}{3}$

۳ (۲)

$3 - \sqrt{2(x+1)} \xrightarrow{-y+5} \sqrt{2x+2} + 2 \to \sqrt{2x+2} + 2 = 3.5$

$\sqrt{2x+2} = 1.5 \to 2x+2 = 2.25$

$\Rightarrow x = \frac{1}{8}$

۴ (۲)

$D_f = (a, 4]$, $D_g = [-1, b) \to D_{f(x-1)} = (a+1, 5] \cap [-2, b-1) = D_{g(x+1)}$

$\xrightarrow{\cap} (-2, 5) \to a+1 = -2, \ b-1 = 5 \to a = -3, \ b = 6$; $a - b = -3 - 6 = -9$

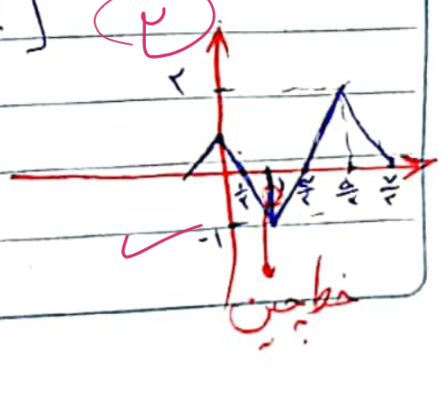
۵ (۲)

$y_1 = f(\frac{1}{2}(x+2)) \xrightarrow{x-2} f(\frac{x}{2}) \xrightarrow{2x} f(x)$

$[-3, 5] \to [-1, 7] \to [-\frac{1}{2}, \frac{7}{2}]$

$D_{g_2} \in [-\frac{1}{2}, \frac{7}{2}]$

$R_{g_2} \in [0, \sqrt{5}]$



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Year: Month: Day:

$g = \frac{x}{a}[ax] \to$ $(-b, -c] \to -dx$; $(-c, 0] \to 0$; $(0, c] \to \frac{1}{2}dx$; $(c, b] \to dx$; $d = 1$

(۶) $a = -2 \to \frac{x}{2}[-2x]$ ②

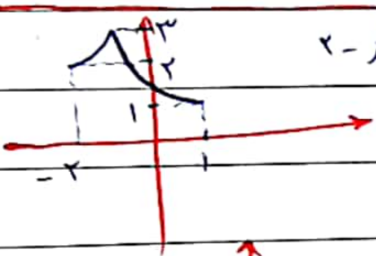
$\to b = 1,\ c = \frac{1}{2}$

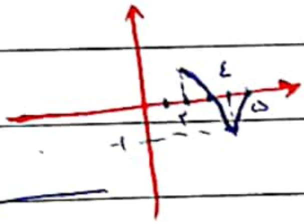
$1 + 2 = 3$

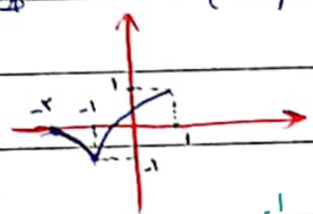
(۷) $f(x) \to x+2 \to -f \to -f+3 \xrightarrow{-x} 3 - \log_2^{2-x} = g(x)$ ④

$\to \left(3 - \log_2^{2+14}\right) + \left(3 - \log_2^{2+62}\right) = -1 - 3 = -4$

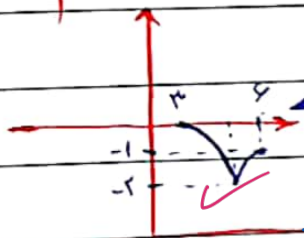
(۸) $2 - f(3-x) \to \ldots -2, x-1 = f(c-x)$ ③







$-x, -3$



(۹) جواب قدرمطلق + است ← $x < -1$

$y = \left|\frac{x-1}{2x-4}\right| + 1 \to g(x) + x < 0 \to g(x) < -1 - x \to$

$\frac{x-1}{2x-4} < -1-x \to \frac{2x^2-2}{2x-4} < 0 \xrightarrow{x<-1} x < -\sqrt{2}$

(۹) ۱۵ $g(x) = \left|\frac{3x-2}{2x-3}\right| \Rightarrow x + \left|\frac{3x-2}{2x-3}\right| < 0 \to$ چرا ۳؟

پاسخنامه را مطالعه کن

$\Rightarrow x < 0 \Leftrightarrow x = (-\infty, 0)$

(۱۰) $f(x)$: $(0,0)$, $(2,27)$, $(3,28)$ $\to g(x) = \sqrt{f(x)(28 - f(x))}$ ② $\begin{cases} f(x) = 0 \to x = 0 \\ -f(x) + 28 = 0 \to x = 3 \end{cases}$

$\Rightarrow$ $0 \quad 3$ $\to x = \{0, 1, 2, 3\} \to$ ۴ عدد

پاسخنامه را مطالعه کن.

$f(x) = k(x-2)^3 + 27 \xrightarrow{(0,0)} k = \frac{27}{8}$

$0 \le f(x) \le 28 \to$ $f(x) = 0 \to x = 0$; $f(x) = 28 \to x = \frac{8}{3}$ $\to 0 \le x \le \frac{8}{3} \to$ ۱ و ۳

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