کلاس دوم ریاضی

تکلیف ۳

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الف) $D =$

$$\frac{x+3}{x^3-2x^2+2x-1} \geq \frac{1}{(x-1)^3}$$

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$$\frac{2}{x^2-5|x-1|-2x+5} = \frac{2}{-5|x-1|+x^2-2x+5} = \frac{2}{5|x-1|+(x-1)(x-3)}$$

$\Delta = b^2 - 4ac = 4 - 4 \times 5 = -16 < 0$ ✓ $D = R$

تاریخ: / /

موضوع:

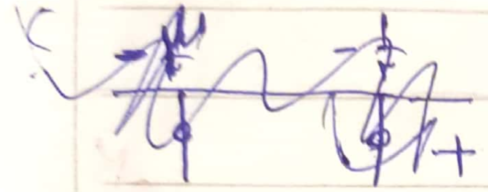
-۴) الف) $2x+1 - x+3 = 0$ $\quad$ $D = R - \{-2\}$

$x = -2$

ب) $\sqrt{|2x+1| - |x+3|}$:

$|2x+1| - |x+3| \geq 0$

$|2x+1| \geq |x+3|$



$2x+1 \geq \pm (x+3)$

$x \geq 2 \quad I$

$x \geq -\frac{4}{3} \quad II$

$2x+1 \geq x+3$ و $2x+1 \geq -x-3$

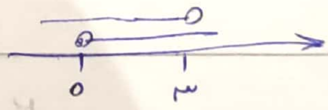
$x \geq 2$ $\quad$ $3x \geq -4$ $\quad$ $x \geq -\frac{4}{3}$

$I \cap II = I \to [2, +\infty)$

-۵) الف)

$1 - \log_3 x > 0 \Rightarrow 1 > \log_3 x \Rightarrow 3 > x$

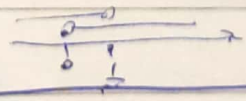
$x > 0$ $\quad$ $D = (0, +\infty) \cap (-\infty, 3) = (0, 3)$



ب)

$1 - \log_{\frac{1}{2}} x > 0 \Rightarrow 1 > \log_{\frac{1}{2}} x \Rightarrow \frac{1}{2} > x$

$x > 0$ $\quad$ $D = (0, +\infty) \cap (-\infty, \frac{1}{2}) = (0, \frac{1}{2})$



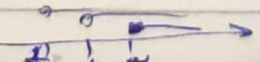
-۶)

$\log_{0/5}^{\log_5 (2x-1)} \geq 0 \Rightarrow \log_5 (2x-1) \geq 1 \Rightarrow 2x-1 \geq 5 \Rightarrow x \geq 3 \quad I$

$\log_5 (2x-1) > 0 \Rightarrow 2x-1 > 1 \Rightarrow x > 1 \quad II$

$2x-1 > 0 \Rightarrow x > \frac{1}{2} \quad III$

$D = I \cap II \cap III = [3, +\infty)$



الف) $2\cos x + 1 > 0 \Rightarrow \cos x > -\frac{1}{2}$

$D = [0, 2k\pi + \frac{2\pi}{3}) \cup [0, 2k\pi - \frac{2\pi}{3})$ -۷

ب)

$\log_{x+1}^{x-1} \geq 0 \Rightarrow \log^{x-1} \geq 1 \Rightarrow x-1 \geq 1 \Rightarrow x \geq 2$ K

$x-1 > 0 \Rightarrow x > 1$ B

$x+1 > 0 \Rightarrow x > -1$ A

$D = K \cap B \cap A = [2, +\infty)$

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$\Delta < 0 \Rightarrow 4^2 - 4(2 - m^2) < 0$

$4 - 8 + 4m^2 < 0$

$4m^2 - 4 < 0 \Rightarrow m^2 < \pm 1$

$-1 < m < 1$

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