

Решение Неравенства №1

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$$\log_{\frac{1}{3}} (3x^2 - 2x + 1) \geq 0$$

$$\log_{\frac{1}{3}} (3x^2 - 2x + 1) - \log_{\frac{1}{3}} 1 \geq 0$$

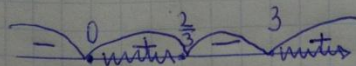
$$\left(\frac{x}{3} - 1\right)(3x^2 - 2x + 1 - 1) \geq 0$$

$$(x-3)(3x^2-2x) \geq 0$$

$$3x(x-3)\left(x-\frac{2}{3}\right) \geq 0$$

$$x(x-3)(x-\frac{2}{3}) \geq 0$$

$$x=0 \quad x=3 \quad x=\frac{2}{3}$$



OD3:

$$\int \frac{x}{3} > 0$$

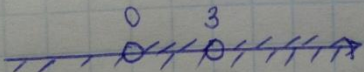
$$\frac{x}{3} \neq 1$$

$$3x^2 - 2x + 1 > 0$$

$(x > 0)$

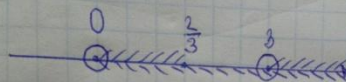
$$\{x \neq 3$$

$$[X \in (-\infty; +\infty)]$$



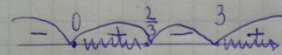
$$x \in (0, 3) \cup (3, +\infty)$$

Уменьш ОДЗ:

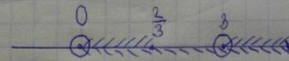


Umkehr: $x \in (0; \frac{2}{3}] \cup (3; +\infty)$

$$\begin{aligned}\log_{\frac{x}{3}} (3x^2 - 2x + 1) &\geq 0 \\ \log_{\frac{x}{3}} (3x^2 - 2x + 1) - \log_{\frac{x}{3}} 1 &\geq 0 \\ \left(\frac{x}{3} - 1\right) (3x^2 - 2x + 1 - 1) &\geq 0 \\ (x - 3) (3x^2 - 2x) &\geq 0 \\ 3x(x - 3) \left(x - \frac{2}{3}\right) &\geq 0 \\ x(x - 3) \left(x - \frac{2}{3}\right) &\geq 0 \\ x = 0 \quad x = 3 \quad x = \frac{2}{3}\end{aligned}$$



Yeni OD3:



Ornek: $x \in (0; \frac{2}{3}] \cup (3; +\infty)$

$$\begin{aligned}\text{OD3:} \\ \begin{cases} \frac{x}{3} > 0 \\ \frac{x}{3} \neq 1 \\ 3x^2 - 2x + 1 > 0 \end{cases} \\ \begin{cases} x > 0 \\ x \neq 3 \\ x \in (-\infty; +\infty) \end{cases} \\ \hline x \in (0; 3) \cup (3; +\infty)\end{aligned}$$