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Aluno(a): _____

1. Resolva as inequações:
   (a) $\log_3(5x-2) < \log_3 4$
   (b) $\log_{\frac{1}{2}}(3x-1) \geq \log_{\frac{1}{2}}(2x+3)$
   (c) $\log_2(2x^2-5x) \leq \log_2 3$
   (d) $\log_{\frac{1}{10}}(x^2+1) < \log_{\frac{1}{10}}(2x-5)$
   (e) $\log_{\frac{1}{2}}(x^2-x-\frac{3}{4}) > 2-\log_2 5$
   (f) $2 < \log_2(3x+1) < 4$
   (g) $\frac{1}{2} < \log_{\frac{1}{2}}(2x) < 1$
   (h) $|\log_2 x| > 1$
   (i) $|2+\log_2 x| \geq 3$
   (j) $|\log_3(x^2-1)| < 1$

2. Resolva as inequações:
   (a) $3\log_3^2 x + 5\log_3 x - 2 \leq 0$
   (b) $\log_2^2 x < 4$
   (c) $1 < \log^2 x < 3$
   (d) $\log_{\frac{1}{2}}^2 -3\log_{\frac{1}{2}} x - 4 > 0$
   (e) $\log_2 x - 6\log_x 2 + 1 > 0$
   (f) $\log_2 x - \log_x 8 - 2 \geq 0$
   (g) $\dfrac{1}{\log_2 x} - \dfrac{1}{\log_2 x - 1} < 0$

3. Determine os valores de a para os quais as raízes são reais:
   (a) $x^2 - 4x + \log_2 a = 0$
   (b) $x^2 - 2x - \log_2 a = 0$
   (c) $3x^2 - 6x + \log a = 0$
   (d) $x^2 - x\log_3 a + 4 = 0$
   (e) $x^2 - x\log_2 a + \log_2 a = 0$

4. Resolva as inequações:
   (a) $\log_{x^2}(x+2) < 1$
   (b) $\log_{(2x+3)} x^2 < 1$

(c) $\log_{x^2}(x^2 - 5x + 4) < 1$

(d) $\log_x \left(\dfrac{4x+5}{6-5x}\right) < -1$

(e) $\log_{(3x^2+1)} 2 < \dfrac{1}{2}$

(f) $\log_x \left(\dfrac{x+3}{x-1}\right) > 1$

(g) $\log_{(x+6)}(x^2 - x - 2) \geq 1$

(h) $\log_{\sqrt{2x^2-7x+6}} \left(\dfrac{x}{3}\right) > 0$

(i) $\log_{\left(\frac{2x+5}{2}\right)} \left(\dfrac{x-5}{2x-3}\right)^2 > 0$