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Aluno(a): _____

1. Classificar em verdadeiro (V) ou falso (F) as seguintes sentenças:

(a) $2^{1,3} > 2^{1,2}$

(b) $(0,5)^{1,4} > (0,5)^{1,3}$

(c) $\left(\frac{2}{3}\right)^{-2,3} > \left(\frac{2}{3}\right)^{-1,7}$

(d) $\left(\frac{5}{4}\right)^{3,1} < \left(\frac{5}{4}\right)^{2,5}$

(e) $(0,3)^{0,2} > 1$

(f) $\pi^{\sqrt{2}} > 1$

2. Resolva as seguintes inequações exponenciais:

(a) $2^x < 32$

(b) $\left(\frac{1}{3}\right)^x > \frac{1}{81}$

(c) $(0,001)^x \leq \frac{1}{\sqrt{1000}}$

(d) $(0,008)^x > \sqrt[3]{25}$

(e) $3^{2x+3} > 243$

(f) $(0,42)^{1-2x} \geq 1$

(g) $4^{x^2+1} \leq 32^{1-x}$

(h) $3^{x^2-5x+6} > 9$

(i) $\left(\frac{1}{8}\right)^{x^2-1} < \left(\frac{1}{32}\right)^{2x+1}$

(j) $(\sqrt{0,7})^{x^2+1} \geq (\sqrt[3]{0,7})^{2x+1}$

3. Resolva as inequações exponenciais:

(a) $(2^{x+1})^{2x-3} < 128$

(b) $(27^{x-2})^{x+1} \geq (9^{x+1})^{x-3}$

(c) $\left(\frac{2}{3}\right)^{3x-2} \cdot \left(\frac{4}{9}\right)^{2x+1} \leq \left(\frac{8}{27}\right)^{x-3}$

(d) $2^{x-1} + 2^x + 2^{x+1} - 2^{x+2} + 2^{x+3} > 240$

(e) $3^{x+5} - 3^{x+4} + 3^{x+4} - 3^{x+2} < 540$

(f) $4^{x+1} - 2^{2x+1} + 4^x - 2^{2x-1} - 4^{x-1} \geq 144$

(g) $3^{2x+2} - 3^{x+3} > 3^x - 3$

(h) $2^x - 1 > 2^{1-x}$

(i) $5^{2x+1} - 26 \cdot 5^x + 5 \leq 0$

(j) $3(3^x - 1) \geq 1 - 3^{-x}$

(k) $2^{|x+1|} \div 2^{|x-2|} < 16$

(l) $3^{|x+3|} \cdot 3^{x-1} > 1$

4. Determine o domínio das funções abaixo:

(a) $f(x) = 2^{\sqrt{x-1}}$

(b) $g(x) = \frac{\pi^x}{3^{x^2-1} - 1}$

(c) $f(x) = \sqrt{4^{3x-1} - 1}$

(d) $h(x) = \frac{1}{|2^x - 1| + 1}$

(e) $f(x) = 5^{x^2+1} + 10$

(f) $f(x) = \sqrt{7^{x-1} + 3}$