Propriedades Operatórias

403. a) $\log 5\left(\frac{5a}{bc}\right) \rightarrow \log 5(5a) - \log 5(bc)$

$(\log_5 5(5) + \log 5(a)) - (\log 5(b) + \log 5(c))$

$\log_5 5 = 1$

b) $\log \frac{b^2}{10a} \rightarrow (\log b + \log b) - (\log 10 + \log a)$

$\log_{10} 10 = 1$

c) $\log_3 \frac{ab^2}{c} \rightarrow \log_3 a + 2\log_3 b - \log_3 c$

d) $\log_2 \frac{8a}{b^3c^2} \rightarrow \log_2 8 + \log_2 a - 3\log_2 b + 2\log_2 c$

$3 + \log_2 a - 3\log_2 b + 2\log_2 c$

404. a) $\log_2 \frac{b^2\sqrt{a}}{c} \rightarrow 2\log_2 b + \log_2 a^{\frac{1}{2}} - \log_2 c$

b) $\log \sqrt{\frac{ab^3}{c^2}} \rightarrow \log a^{\frac{1}{2}} + 3\log b^{\frac{1}{2}} - 2\log c^{\frac{1}{2}}$

c) $\log_3 \frac{ab^3}{c \cdot \sqrt[3]{a^2}} \rightarrow \log a + 3\log b - \log c + \frac{2}{3}\log_3 a$

d) $\log \frac{\sqrt[4]{a^2b}}{\sqrt[3]{10c}} \rightarrow \frac{2}{4}\log a + \frac{1}{4}\log b - \frac{1}{3} + \frac{1}{3}\log c$

405. a) $\log_6 x^2 y^3 \to 2\log_6 x + 3\log_6 y \to 4 + 9 = 13$ //

b) $\log_6 \frac{\sqrt[4]{x}}{by} \to \frac{1}{4}\log_6 x - 1 + 3 \to \frac{1}{2} - 1 + 3 \to \frac{1}{2} + \frac{2}{1} = \frac{5}{2}$ ///

406. a) $\log_2 a + \log_2 b - \log_2 c \leftarrow \log_2 \frac{ab}{c}$

b) $2\log a - \log b - 3\log c \leftarrow \log \frac{a^2}{b\sqrt{c^3}}$

c) $\log \frac{10^2}{ab^3\sqrt{c^2}} \to 2 - \log a + 3\log b - 2\log c$