

"What do you call a person who likes to blow up bars"

① $5\log_3 x + 7\log_3 y$

O $\log_3 x^5 y^7$

② $6\log x - 4\log y - 2\log z$

E $\log \frac{x^6}{y^4 z^2}$

③ $3(\log_3 x - 4\log_3 y)$

A $3\log_3 x - 12\log_3 y$

$\log_3 \frac{x^3}{y^{12}}$

④ $\log \frac{1}{x} + 4\log x$

L $\log (\frac{1}{x} \cdot x^4)$

$\log \frac{x^4}{x}$

$\log x^3$

⑤ $20\log \sqrt[5]{x}$

R $20\log x^{\frac{1}{5}}$

$\log (x^{\frac{1}{5}})^{20}$

$\log x^4$

⑥

N $3\log_3 x - \log_3 \frac{1}{y}$

$\log_3 \frac{x^3}{\frac{1}{y}}$

$\log_3 x^3 y$

⑦ $\frac{1}{2}(\log x + 3\log y) - 2\log z$

$\frac{1}{2}\log x + \frac{3}{2}\log y - 2\log z$

$\log \frac{\sqrt{x} \sqrt{y^3}}{z^2}$

$\log \frac{\sqrt{x} y \sqrt{y}}{z^2}$

$\log \frac{y \sqrt{xy}}{z^2}$

⑧ $3(2\log_3 x - 4\log_3 y) + 2(5\log_3 y - \log_3 x)$

A $6\log_3 x - 12\log_3 y + 10\log_3 y - 2\log_3 x$

$\log_3 \frac{x^6 y^{10}}{y^{12} x^2}$

$\log_3 \frac{x^4}{y^2}$

⑨ $\log_3 x - 2(\log_3 y + 3\log_3 x)$

M $\log_3 x - 2\log_3 y - 6\log_3 x$

$\log_3 \frac{x}{y^2 x^6} = \log_3 \frac{1}{y^2 x^5}$

⑩ $\log \left(\frac{x^2}{x^2-1} \right) + \log \left(\frac{x+1}{x} \right)$

O $\log \left(\frac{x^2}{(x+1)(x-1)} \cdot \frac{x+1}{x} \right)$

$\log \frac{x}{x-1}$

⑫ $\log(x+2) - (\log(x^2-4) - \log(x^2-x-2))$

S $\log(x+2) - \log(x^2-4) + \log(x^2-x-2)$

$\log \frac{(x+2)(x-2)(x+1)}{(x+2)(x-2)} = \log(x+1)$

⑬ $\log(x^2+2x+1) - \log(x^2-1)$

B $\log \frac{(x+1)(x+1)}{(x+1)(x-1)} = \log \frac{x+1}{x-1}$