

Start

$\log 9$

$2\log 2 + \log 5$	2	$\frac{2}{3}\log_3 27$	$-\frac{1}{4}\log x$	$\log \frac{1}{\sqrt[4]{x}}$	$\frac{1}{2}\log 81$
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$\log 20$					
$\log_a b = c \Leftrightarrow$					

$a^c = b$	$a^b = c$	$\log_a c = b \Leftrightarrow$	$-\frac{1}{2}\log_4 16$	-1	$\log \frac{64}{9}$
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					$3\log 4 - 2\log 3$
					19

$-4\log x$	$2\log x - \log 3y$	$\log \frac{x^2}{3y}$	$\frac{2}{3}$	$\frac{2}{3}\log_5 5 - \log_3 1$	$2\log_3 9 + 3\log_2 32$
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$$\log \frac{1}{x^4}$$

$$\log_c a = b \Leftrightarrow$$

$4\log 3 - \log 9 + \log 5$	$b^a = c$	$\log_b c = a \Leftrightarrow$	$\log 6$	$\log 3 + \log 4 - \log 2$	$c^b = a$
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$\log 45$					
$\log 4$					

$\log 20 - \log 5$	$\log 6 - \log 3$	$\log 2$	$2\log_5 10 - \log_5 4$	2	$b^c = a$
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$$\log_b a = c \Leftrightarrow$$

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

Finish	3	$\frac{3}{5}\log_3 243$	1	$\frac{1}{3}\log_4 64$	$2\log x - \frac{1}{3}\log y$
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