Logarithms - Overview (24/6/23)

Q1

Show that $ln\left(x-\sqrt{x^2-1}\right)=-ln\left(x+\sqrt{x^2-1}\right)$

Q2

If $k=log_{24}12$, write the following in terms of k:

(a) $log_{24}2$ (b) $log_{24}6$

Q3

Prove that $log_b c=\frac{log_a c}{log_a b}$

Q4

Prove that $\int\frac{1}{x}dx=\ln|x|$ for all $x\neq 0$,

assuming that $\int\frac{1}{x}dx=\ln x$ for $x>0$

Q5

Write $log_2 3$ in terms of logs to the base 10