Assignment 14: Due Mon Nov 13th

Suppose

$$\log_5(a) + \log_5(b^2) = -91$$
$$\log_5(b) + \log_5(a^2) = 103$$

$A = \log_5(a)$

$B = \log_5(b)$

Find ab.

$\log_5(a) + 2 \cdot \log_5(b) = -91$

$\log_5(b) + 2 \cdot \log_5(a) = 103$

$A + 2B = 91$

$B + 2A = 103$

$B = 103 - 2A$

$A + 2(103 - 2A) = -91$

$A + 206 - 4A = -91$

$-3A + 206 = -91$

$-3A = -297$

$A = 99$

$\log_5 a = 99$

$a = 5^{99}$

$B + 2(99) = 103$

$B + 198 = 103$

$B = -95$

$\log_5 b = -95$

$b = 5^{-95}$

$(5^{99})(5^{-95})$

$5^4 = 625$