QUIZ 4

(1) Can you solve $2^x = 5 \mod 7$? If so, do it. If not, why?

(2) Is the following true or false: $\ln x = \mathcal{O}(\sqrt{x})$.

(3) Let's say the message space, ciphertext space, and the key space is $\mathbb{F}_{11}$ and you know that messages are being encrypted by

$$e_k(m) = km \mod 11$$

Suppose you discover that for $m = 2$ that $e_k(m) = 4$. What is k?