(1) Use the Legendre symbol to determine whether 123 is a square \( \pmod{401} \). Note that 401 is prime.

(2) Evaluate the Jacobi symbol

\[
\left( \frac{24601}{365235} \right),
\]

showing each step, and explain what the answer means.

(3) For the numbers \( n = 1, 5, 7, 11 \), do the following: Suppose that \( p \) is a prime congruent to \( n \) \( \pmod{12} \), and determine whether 3 is a square modulo \( p \).