(1) (Page 105, problem 10) A group of people are arranging themselves for a parade. If they line up three to a row, one person is left over. If they line up four to a row, two people are left over, and if they line up five to a row, three people are left over. What is the smallest possible number of people?

(2) Find the smallest nonnegative solution to the system of congruences

\[
19x \equiv 103 \pmod{900},
\]
\[
10x \equiv 511 \pmod{841}.
\]

(3) Use fast modular exponentiation to compute \(3^{75} \pmod{103}\) by hand. Show each step as on page 79 of the text.