I. Suppose that for the knapsack cryptosystem, the superincreasing knapsack is (3,5,12,23) with \( n = 47, m = 6 \)
   a. Give the public key
   b. Encrypt the message \( M_1 = 1110 \) (given in binary). Give your result in decimal.
   c. Encrypt the message \( M_2 = 1010 \) (given in binary). Give your result in decimal.

II. Suppose that for the Knapsack cryptosystem, the SIK is (11, 22, 44, 88, 167, 337, 700, 1370) with \( n = 2800, m = 17, m^{-1} = 1153 \)
   a. Give the public key
   b. Encrypt the message \( M_1 = 11101010 \) (given in binary). Give your result in decimal.
   c. Encrypt the message \( M_2 = 10101100 \) (given in binary). Give your result in decimal.

III. Suppose that for the Knapsack cryptosystem, the SIK is (4,11,29,51,101,201,401,801) with \( n = 1609, m = 69, m^{-1} = 1096 \)
   a. Give the public key
   b. Encrypt the message \( M_1 = 10001010 \) (given in binary). Give your result in decimal.
   c. Encrypt the message \( M_2 = 00111101 \) (given in binary). Give your result in decimal.