

## Exercise A#3

A trusted company want to sell RSA key pairs to users but want to limit the number of prime integers to generate. For this, it creates a pool of prime numbers  $p_1, ..., p_n$ . Every time a new customer wants a new key, his modulus becomes  $n = p_i \times p_j$  for random *i* and *j* and his exponent is randomly drawn. Discuss the security.