#include <stdio.h>

#include <stdlib.h>

#include <math.h>

long long gcd(long long a, long long b) {

if (b == 0)

return a;

return gcd(b, a % b);

}

long long modInverse(long long a, long long m) {

a = a % m;

for (long long x = 1; x < m; x++) {

if ((a \* x) % m == 1)

return x;

}

return -1;

}

void generateKeys(long long p, long long q) {

long long n = p \* q;

long long phi = (p - 1) \* (q - 1);

long long e = 3;

while (gcd(e, phi) != 1) {

e++;

}

long long d = modInverse(e, phi);

printf("Public Key: (e: %lld, n: %lld)\n", e, n);

printf("Private Key: (d: %lld, n: %lld)\n", d, n);

}

int main() {

long long p = 61; // Example prime number

long long q = 53; // Example prime number

generateKeys(p, q);

return 0;

}

