f. What is the key size for Caesar cipher whose legimate characters are

abcdefghijklmnopqrstuvwxyz1234567890

g. How many symmetric kets are required for N people to communicate using Symmetric Key Cryptograph?

Scenario I.

The messages sent and receive

Cipher text sent and received	What is the plain text?
kxxt	
bcdmnwc	
rwbcadlcxa	
bnldarch	
sjej	

- What is the key?

Ans:
f.
the number of characters are 36 (26 + 10)
possible number of keys: 36
2^5 = 32, 2^6 = 64
⇨ 64 > 36 >32
⇨ Thus, key size is 6

g.
there will be [n*(n - 1)] / 2 keys

because two people need a key, then add keys together we can get n people need (n-1) + (n -2) + …… + 1 + 0 keys, we can see (n-1) + 0 is n – 1, (n-2) + 1 is n – 1, so the number of n - 1 is n , and we get n * (n-1), then divide 2 to remove the repeated.
Thus, there will be [n*(n - 1)] / 2 keys

Scenario I.

Cipher text sent and received	What is the plain text?
kxxt	book
bcdmnwc	student
rwbcadlcxa	instructor
bnldarch	security
sjej	java

The key is 9

We try it 25 kind of method to shift left K letters, and compare it with each to figure out which one is correct vocabulary, if there is more than one correct, go check with other cipher text, until there is only one key fit all.