

Homework 8

4.18

a) 7

b)

```
Key Length = 1
0.041
The Average index of coincidence for key length 1 = 0.041
Key Length = 2
0.039
0.043
The Average index of coincidence for key length 2 = 0.041
Key Length = 3
0.045
0.042
0.039
The Average index of coincidence for key length 3 = 0.042
Key Length = 4
0.037
0.043
0.042
0.046
The Average index of coincidence for key length 4 = 0.042
Key Length = 5
0.048
0.052
0.046
0.031
0.04
The Average index of coincidence for key length 5 = 0.044
Key Length = 6
0.034
0.05
0.042
0.051
0.038
0.037
The Average index of coincidence for key length 6 = 0.042
Key Length = 7
0.058
0.06
0.081
0.054
0.055
0.061
0.047
The Average index of coincidence for key length 7 = 0.059
Key Length = 8
0.039
0.051
0.03
0.053
0.04
0.051
0.057
0.042
The Average index of coincidence for key length 8 = 0.045
Key Length = 9
0.041
0.053
0.041
0.034
0.052
0.03
0.054
0.03
0.03
The Average index of coincidence for key length 9 = 0.041
```

We chose 7 as the key length.

c) The Relative rotations are:

0
9
2
7
11

Group 2: Kyle, Jesus, Connor, Mason, Ying, Gage, Adam

9

25

d) ajchliz
bkdimka
clejnlb
dmfkomc
englpnd
fohmqoe
gpnrpf
hqjosqg
irkptrh
jslqusi
ktrmvtj
lunswuk
mvotxvl
nwpuywm
oxqvzxn
pyrwayo
qzsxbzp
ratycaq
sbuzdbr
tcvaecs
udwbfdt
vexcgeu
wfydhfv
xgzeigw
yhafjhx
zibgkiy

We chose englpnd and changed the p to an a. We got the following:

It is to be questioned whether in the whole length and breadth of the world there is a more admirable spot for a man in love to pass a day or two than the typical english village it combines the comforts of civilization with the restfulness of solitude in a manner equal led by no other spot except the new york public library