

Q3)

(i)

For digit 0 the principal mode of variation is only 12.
For digit 1 the principal mode of variation is only 13.
For digit 2 the principal mode of variation is only 5.
For digit 3 the principal mode of variation is only 10.
For digit 4 the principal mode of variation is only 10.
For digit 5 the principal mode of variation is only 4.
For digit 6 the principal mode of variation is only 10.
For digit 7 the principal mode of variation is only 9.
For digit 8 the principal mode of variation is only 7.
For digit 9 the principal mode of variation is only 10.

The significant mode of variation is far less than 28^2 .
This is because digits have a certain way to be written so the variation in writing is only in a few directions.

(ii)

We observe that the the principal mode of variation tends to make a good difference in the way that digit is written but not significant enough to make it unrecognizable.

Principal mode of variation tells us that most people tend to have a variation of writing a digit in that way.
For writing 1, most people vary in their inclination of length of 1.