1. “DAMP” and “ROAD” are the two meaningful words, the encryption keys are 10 and 20 respectively.
2. The plain text is "ANYBODY CAN MAKE HISTORY. ONLY A GREAT MAN CAN WRITE IT."Encryption key is (9, 17). Decryption key is (3, 1) using the encryption key.
3. .
4. Modulus is 784 because the encrypted bigram can take 28x28 values. The size of the key space is the multiplication of the number of alpha and beta values that can take. Beta can take any value between 0 and 784. For alpha, this condition must be met: gcd(alpha, 784) = 1. There are 336 values satisfying this. Key space is 784\*336=263424
5. .
6. The encryption key is (121, 105). The plain text is “IT DOES NOT DO TO DWELL ON DREAMS AND FORGET TO LIVE.”
7. The key length is 5 and the key is “hayao”. The plain text is:

“But there is one way in this country in which all men are created equal-there is one

human institution that makes a pauper the equal of a Rockefeller, the stupid man the

equal of an Einstein, and the ignorant man the equal of any college president. That

institution, gentlemen, is a court. It can be the Supreme Court of the United Etates or

the humblest J.P court in the land, or this honorable court which you serve. Our courts have their faults, as does any human institution, but in this country our courts

are the great levelers, and in our courts all men are created equal.”