1. The minimum block length is 2.

2. To decrypt this text we need the inverse of the encryption matrix,

$$\begin{bmatrix} 9 & 2 \\ 13 & 3 \end{bmatrix}^{-1} \equiv \begin{bmatrix} 3 & 24 \\ 13 & 9 \end{bmatrix} \pmod{26}$$

Now we can left multiply our ciphertext (converted into column vectors) by the decryption matrix, to obtain plaintext vectors.

$$\begin{bmatrix} Y \\ I \end{bmatrix} \equiv \begin{bmatrix} 24 \\ 8 \end{bmatrix}; \begin{bmatrix} F \\ Z \end{bmatrix} \equiv \begin{bmatrix} 5 \\ 25 \end{bmatrix}; \begin{bmatrix} M \\ A \end{bmatrix} \equiv \begin{bmatrix} 12 \\ 0 \end{bmatrix}$$

$$\begin{bmatrix} 3 & 24 \\ 13 & 9 \end{bmatrix} \times \begin{bmatrix} 24 \\ 8 \end{bmatrix} \equiv \begin{bmatrix} 4 \\ 20 \end{bmatrix} \pmod{26}$$

$$\begin{bmatrix} 3 & 24 \\ 13 & 9 \end{bmatrix} \times \begin{bmatrix} 5 \\ 25 \end{bmatrix} \equiv \begin{bmatrix} 17 \\ 4 \end{bmatrix} \pmod{26}$$

$$\begin{bmatrix} 3 & 24 \\ 13 & 9 \end{bmatrix} \times \begin{bmatrix} 12 \\ 0 \end{bmatrix} \equiv \begin{bmatrix} 10 \\ 0 \end{bmatrix} \pmod{26}$$

So our plaintext message is encoded as {4, 20, 17, 4, 10, 0} which corresponds to EUREKA.

3. (a) To easily do the frequency count we can sort the letters alphabetically -

   MCIFGSQFSHWGGOTSKWHVASPSQOIGSHVSFSWGOQVOBQSWKOGBCHZWGHSBWBU
   ABBBBCCFFFGGGGGGGHHHHHIIKKMOOOOOPQQQQSSSSSSSSSSSTUVVVWWWWWWZ

   From here we can see the frequency count is as follows:

A	1
B	4
C	2
F	3
G	7
H	5
I	2
K	2
M	1
O	5
P	1
Q	4
S	10
T	1
U	1
V	3
W	6
Z	1