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.

4.