One Letter at a Time

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Abstract

Cryptography is used to cipher and decipher secret code messages. There are many different ways that messages can be coded and matrices are one of those. The purpose of this research was to see how matrices were used in cryptography. When matrices were chosen for the method in which the message would be ciphered the researcher would use an encoding matrix. The encoding matrix is secretive between the sender and receiver. The researcher then multiplied the encoding matrix by the message matrix; the product of those two matrices would then become the coded message. When the message was deciphered the researcher took the coded message and multiplied by the decoding matrix which is the inverse of the encoding matrix. The product of those two matrices would be the numbers that match the letters in the original message. Since the beginning message and ending message turned out to be the same after the experiment it showed that matrices work accurately with cryptography and that matrices can be used as a successful technique for ciphering messages. The researcher affirms that using matrices is a simple way to cipher and decipher information and that matrices and cryptography can be used with each other.