

MORE CRYPTOGRAPHIC PUZZLES

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Puzzle 1

A message containing 30 letters is enciphered as follows. A certain two-digit number is selected and used to encipher the first two letters. This number is then squared, producing a four-digit number which is used to encipher the next four letters. This process is continued until a sixteen-digit number is produced and this is used to encipher the last sixteen letters of the message. The process of encipherment involves adding (modulo 26) the digit and the corresponding letter in the message, using the equivalents $A = 1$, $B = 2$, and so on. The enciphered message reads YSTQW OJAMH OMBYZ RJSMM KHLKI MLWXY. What does it say?

Puzzle 2

A certain two-letter word is treated as follows. The two letters are added together modulo 26 (using the equivalents $A = 1$, $B = 2$, and so on), the letter so formed placed at the end and the first letter deleted. The same operation is then performed with the two remaining letters, etc. After a million such operations the letters are XB. What were the original letters?

Puzzle 3

A 3×3 magic square is constructed with every set of three numbers in a line (horizontally, vertically or diagonally) summing to 42. It is then observed that if the numbers are converted into letters ($A = 1$, $B = 2$, etc.) the resulting letters can be anagrammed into a word meaning 'bombastic speeches'. What is the square?

Solutions to these three puzzles can be found in Answers and Solutions at the end of this issue.