

# Download The Inverse Operation

where  $I$  is the identity matrix. Courant and Hilbert (1989, p. 10) use the notation  $A^{-1}$  to denote the inverse matrix. A square matrix has an inverse iff the determinant is non-zero (Lipschutz 1991, p. 45). The so-called invertible matrix theorem is a major result in linear algebra which associates the existence of a matrix inverse with a number of other equivalent properties. I take no credit for the questions - these were from an existing worksheet. I have just merely jazzed them up with some pictures (courtesy of google) and made it into a challenge. The children love these challenges in my class!... Formal definitions In a unital magma  $(S, \cdot)$ . Let  $e$  be an identity element of  $(S, \cdot)$  (i.e.,  $S$  is a unital magma) and  $a \in S$ . If  $b \in S$  is such that  $ba = e$ , then  $b$  is called a left inverse of  $a$  and is called a right inverse of  $a$ . If an element  $b$  is both a left inverse and a right inverse of  $a$ , then  $b$  is called a two-sided inverse, or simply an inverse, of  $a$ . Powerpoint explaining how we use the inverse operation to work out the missing numbers. Aimed at, 'top maths' year 3 but suitable for year 4 as well. - The Inverse Operation