(1) Let
$$A = \begin{pmatrix} 1 & 1 & -1 \\ 2 & 1 & 1 \\ -1 & 3 & 1 \end{pmatrix}$$

Find A^{-1} using the general formula for the inverse matrix and verify that your answer is correct.

(2) Using the general formula for the inverse of a matrix prove that if A is an invertible upper triangular matrix then A^{-1} is also upper triangular.