Elementary Linear Algebra - MATH 2250 - Quiz 4

Name:

1. Let A, B, and C be invertible, and A^{-1}, B^{-1}, and C^{-1} be their inverses, respectively. What is the inverse of ABC, in terms of A^{-1}, B^{-1}, and C^{-1}?

   $(ABC)^{-1} =$

2. Let
$$M = \begin{bmatrix} 1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 2 & 0 & 1 \end{bmatrix}.$$
   What is the inverse of M? (Hint: note that M is the product of two elementary matrices.)

3. How many 3×3 permutation matrices are there?