1. If $A$ is a $4 \times 2$ matrix, which elementary matrix $E$ and which matrix multiplication would you use to perform the row operation $R_3 \leftarrow 5R_1$ on $A$?

2. For the following augmented matrices:
   a) $M_1 = \begin{pmatrix} 1 & 0 & -1 \\ 0 & 0 & 0 \end{pmatrix}$,
   b) $M_2 = \begin{pmatrix} 1 & 4 & -1 & 2 \\ 0 & 0 & 3 & 5 \end{pmatrix}$

   answer the following questions:
   (1) write the solution set of each system in the parametric form;
   (2) rewrite each solution set in parametric vector form;
   (3) write the dimension of the solution set for each system.