HOMEWORK 6-PART A+B

1. Calculate teh determinant of the given matrix.
$$\begin{pmatrix} 1 & -1 & 2 \\ -1 & 1 & 5 \\ 1 & 0 & -1 \end{pmatrix}$$

2. (1) Calculate the determinant of the given matrix.
$$A = \begin{pmatrix} 10 & -1 & -3 & 9 \\ 3 & 2 & -3 & 3 \\ 3 & 1 & -2 & 3 \\ -10 & 2 & 2 & -9 \end{pmatrix}$$

(2) Calculate $\det(A^4)$.

3. (1) Which x makes the determinant of the following matrix vanish?
$$\begin{pmatrix} 2-x & 0 & 1 \\ -3 & -1-x & -1 \\ -2 & 0 & 5-x \end{pmatrix}$$

(2) Plug in the value of x you get for the first question, you will get a matrix A, then please solve the linear system $Ax = 0$. (maybe you get several matrices, then do in several cases.)