

### EXERCISES OF SECTION 3.2 3.3 AND 3.4

**Question 1.** Suppose that  $A$  is a  $3 \times 3$  skew symmetric matrix. What is  $|A|$ ?

**Question 2.** Let  $A = \begin{bmatrix} 2 & 1 & 3 \\ -1 & 4 & -2 \\ 3 & 1 & 5 \end{bmatrix}$ . (This is the matrix in Example 1 from the last lecture.) Compute the sum of the entries from the second column of  $A^{-1}$ ?

**Question 3.** For what value(s) of  $k$  does the following linear system have infinitely many solutions?

$$\begin{bmatrix} 4 & -3 & 0 & \vdots & k-3 \\ k-1 & 0 & 3 & \vdots & -3 \\ k-1 & 3 & k+3 & \vdots & -8 \end{bmatrix}$$