Name:

## Linear Algebra II - Quiz 5

All the solutions should be properly justified and explained. Clarity of the presentation will also be rewarded.

The maximal number of points awarded is 10 .
Let $\theta, \varphi \in \mathbb{R}$. Prove that the following matrix is orthogonal:

$$
\left[\begin{array}{ccc}
\cos \theta & \sin \theta \cos \varphi & \sin \theta \sin \varphi \\
-\sin \theta & \cos \theta \cos \varphi & \cos \theta \sin \varphi \\
0 & -\sin \varphi & \cos \varphi
\end{array}\right]
$$

