Name:

## Linear Algebra II - Quiz 3

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 .
We consider the following vectors of $\mathbb{R}^{4}$ :

$$
\vec{u}=\left[\begin{array}{l}
2 \\
3 \\
1 \\
0
\end{array}\right] \quad \text { and } \quad \vec{v}=\left[\begin{array}{c}
0 \\
2 \\
1 \\
-\sqrt{2}
\end{array}\right]
$$

1. Compute $\|\vec{u}\|,\|\vec{v}\|, \vec{u} \cdot \vec{v}$ and the angle between $\vec{u}$ and $\vec{v}$.
2. Give an orthonormal basis of $V=\operatorname{Span}(\vec{u}, \vec{v})$.
