Exercise 1
Find $v + u$, $3v$, the length $\|u\|$, $\|v\|$, the dot product $u \cdot v$, the angle between $u$ and $v$ and determine whether $u$ and $v$ are orthogonal (or for which values of parameters $u$ and $v$ are orthogonal, if any are present):
(i) $u = (1, 0, 1)$, $v = (2, 1, -1)$;
(ii) $u = (1, 0, 0, -1, 0, 1)$, $v = (0, 2, 0, 1, -1, 1)$;
(iii) $u = (-2, -k, 0, k)$, $v = (0, -k, -1, 1)$;

Exercise 2
Write the system in the matrix form:
(i)
\[
\begin{align*}
&x - 2z + y = -2 \\
&z + x = -3
\end{align*}
\]
(ii)
\[
\begin{align*}
&2x - 4t + z = -1 \\
&t + 2y = -7 \\
&3y + z - x = 4
\end{align*}
\]