4.6.16) One possibility is

\[
\left\{ \begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 & 1 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}, \begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \right\}.
\]

4.6.33) The span of \[
\begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix} \text{ and } \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}
\]
is one possibility.

4.6.42) Since \(\dim W = \dim V\), \(W\) is also finite dimensional. Let \(\dim W = n\). Thus, \(W\) has a finite basis \(\{w_1, w_2, \ldots, w_n\}\). This basis is a set of linearly independent vectors, by the definition of a basis. Since \(W\) is a subspace of \(V\), they are \(n\) linearly independent vectors in \(V\). By Theorem 4.12, \(\{w_1, w_2, \ldots, w_n\}\) is a basis for \(V\). Hence, both \(V\) and \(W\) are the span of \(\{w_1, w_2, \ldots, w_n\}\), so they are the same vector space.