Suppose the linear operator \( T : \mathbb{R}^4 \to \mathbb{R}^5 \) is one-to-one. What are three equivalent statements?

Which of the following are bases for \( \mathbb{R}^3 \)? Circle those that are.

\[
\begin{align*}
\{(1, 0, 0), (0, 1, 0)\} \\
\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\} \\
\text{span}\left(\begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}\right) \\
\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}
\end{align*}
\]