1 Let $\vec{x} = [\ 1\ 2\ 3\ ]^T$, $\mathcal{B} = \{[\ 1\ 0\ 0\ ]^T,\ [\ 1\ 1\ 0\ ]^T,\ [\ 1\ 1\ 1\ ]^T\}$, and $\mathcal{C} = \{[\ 1\ 1\ 0\ ]^T,\ [\ 0\ 1\ 1\ ]^T,\ [\ 1\ 0\ 1\ ]^T\}$.

1.a Find $[\vec{x}]_{\mathcal{B}}$