Name: _____

Section: _____

1. Consider the linear transformation $T : \mathbb{P}_2 \to \mathbb{R}$ given by $T(f) = \int_0^2 xf(x)dx + f(1)$. Choose bases for $\mathbb{P}_2$ and $\mathbb{R}$ and compute the matrix of T with respect to that basis. Is T onto?

2. Let $\mathcal{B} = \{(1, -1), (1, 1)\}$. This is a basis for $\mathbb{R}^2$. Compute the change of basis matrix $P_{\mathcal{B} \leftarrow std}$.

3. With $\mathcal{B}$ as in problem 2, compute $P_{std \leftarrow \mathcal{B}}$.