

Name:

1. Let $V = \{(x, y, z) \in \mathbb{R}^3 \mid 2x - y + z = 0\}$ and $\mathbf{u} = (1, 0, 1)$. Compute $\text{proj}_V \mathbf{u}$.

2. Let $T : P_2 \rightarrow \mathbb{R}^2$ be defined by

$$T(p) = \begin{pmatrix} p(0) \\ p'(1) \end{pmatrix}.$$

Let $B = \{1, x - 1, (x - 1)^2\}$ and C be the standard basis on \mathbb{R}^2 . Compute $[T]_{BC}$.