

Name:

1. Let $S = \{(x, y, z) \in \mathbb{R}^3 \mid x - y + z \in \mathbb{Z}\}$.

(a) Is S closed under addition?

(b) Is S closed under scalar multiplication?

(c) Is S a subspace of \mathbb{R}^3 ?

2. Let $T = \{f \in P_3 \mid f'(2) = 0\}$.

(a) Is T closed under addition?

(b) Is T closed under scalar multiplication?

(c) Is T a subspace of P_3 ?