

Name:

Consider the following two subsets of \mathbb{P}_3 . One of them is a subspace of \mathbb{P}_3 , while the other is not. For each subset, indicate whether or not it is a subspace. For the one that is a subspace, give a basis for it and its dimension.

1. $V = \{f \in \mathbb{P}_3 \mid f(0) = f(1) = 0\}$

2. $W = \{f \in \mathbb{P}_3 \mid f(0) \cdot f(1) = 0\}$