

Homework 15 MATH 304 Section 3

Assigned: Wednesday, October 29.

Potentially Collected: Wednesday, November 5.

1. Find a basis for the set of vectors in \mathbb{R}^3 in the plane defined by $x + 2y + z = 0$. Hint: Think of the equation as a system of linear equations.
2. Let \mathbb{F} be the set of all real-valued functions. That is, $f \in F$ is such that $f : \mathbb{R} \rightarrow \mathbb{R}$.
 - Show that \mathbb{F} is a vector space with scalars \mathbb{R} .
 - Find a basis for the subspace spanned by $\{\sin(x), \sin(2x), \sin(x) \cos(x)\}$.