

## REAL FUNCTION APPROXIMATORS

## Why

Since the function space  $R \to R$  is a vector space, can we approximate a "complex" element of this set by some basis of "simpler" functions in  $R \to R$ .

Of course, there may be no set that can represent f. So instead we may be interested in an element  $g \in \text{span}\{g_1, \ldots, g_d\}$  which approximates f.<sup>1</sup>

## **Definition**

A real function approximator for a function  $f: \mathbb{R} \to \mathbb{R}$  is a function  $g: \mathbb{R} \to \mathbb{R}$ .

<sup>&</sup>lt;sup>1</sup>Future editions will modify.

