

## REAL PROBABILITY DENSITIES

## Why

We want to talk about probability on the set of outcomes which is the real numbers.

## **Definition**

A probability density or probability density function is a real-valued function on the reals which is nonnegative and normalized. A real-valued function on the reals is normalized if it integrates to 1.

## **Notation**

Let  $f: \mathbf{R} \to \mathbf{R}$  with  $f \geq 0$  and  $\int f = 1$ . Then f is a probability density.

