

## Random Variable Moments

## 1 Why

TODO

## 2 Results

Let n be a natural number. If the integral of the nth power of a real-valued random variable exists, the nth moment of the random variable is the expectation of its nth power.

## 2.1 Notation

Let n be a natural number. Let  $(X, \mathcal{A}, \mu)$  be a probability space. Let f be a real-valued random variable on X such that  $\int f^n d\mu$  exists. In ex-