



# Product Under Independence

## 1 Why

TODO

## 2 Result

**Proposition 1.** *The expectation of the product of two independent random variables is the product of their expectations.*

*Proof.* Let  $f, g$  be two independent random variables. We want to show

$$\mathbf{E} fg = \mathbf{E} f \mathbf{E} g.$$

□