$$P(X>4) = \mathbb{E}[I(X>4)]$$

$g(x) = I(x>4)$

simulér $X \sim N(0,1)$

udregn $g(x)$

estimér $\mathbb{E}[g(X)]$ ved gns.

$$\mathbb{E}[I(X>4)] = \int_{-\infty}^{\infty} I(x>4)\, \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}\, dx = \int_4^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}\, dx$$

$u = 1/x \quad \frac{du}{dx} = \dots$

$$= \int_?^? ? \, du = \mathbb{E}[h(u)]$$

Generelt: for $-\infty < A < B < \infty$

$$\int_A^B f(x)\, dx = \int_A^B |B-A| \cdot f(x) \frac{1}{|B-A|}\, dx$$

$$= \mathbb{E}[|B-A| \cdot f(x)]$$

$X \sim \text{Unif}(A, B)$