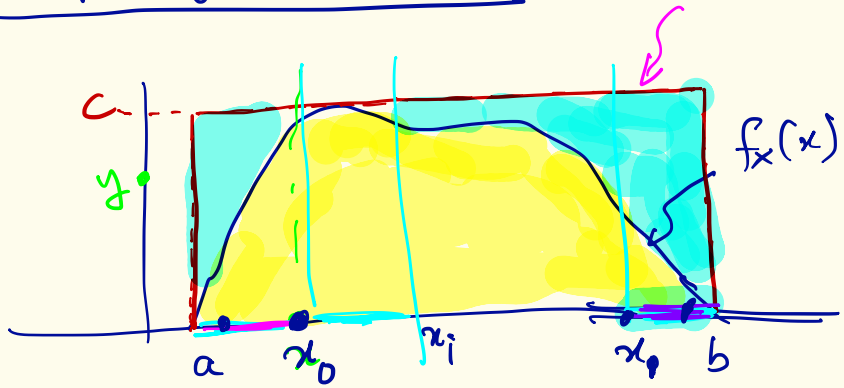
Computational Statistics

# Accept / Reject Method




Generate

$x \sim U[a,b]$

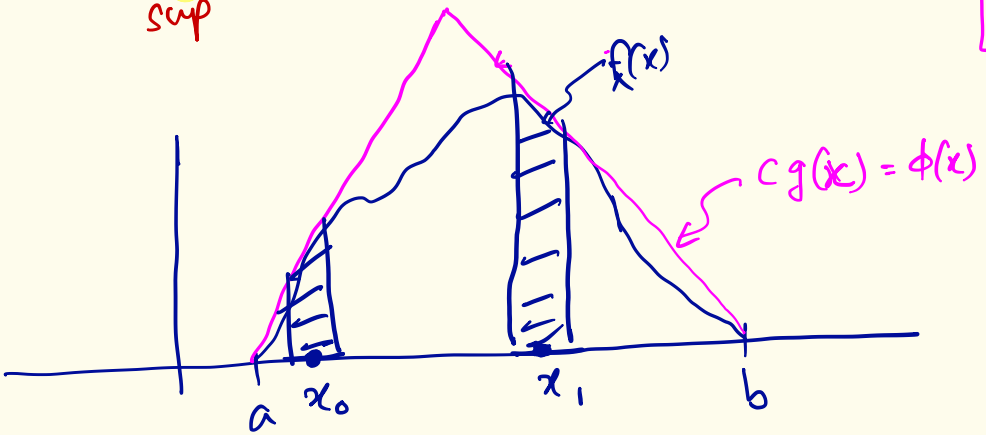
$Y \sim U[0,c]$

indep. of $X$

$Y \le f(x)$

$y \le f(x)$

$c = \max_{\text{sup}} \{f(x) : x \in [a,b]\}$




Generate

$x$ from $g_X(x)$

$Y \sim U[0, cg(x)]$

till $y \le f(x)$

Let be $g$ be an arbitrary density such that $\phi(x) = cg(x)$ majorizes $f(x)$ for some constant $c$. $(c \geq 1)$

The density $g(x)$ is called as proposal density and it should be "easy" to sample from $g(x)$.

Efficiency of Accept/Reject method. $\frac{1}{c}$