Lecture 8: Acceptance-rejection sampling continued

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Recap

- Want to sample continuous r.v. $X \sim f$
- Can easily sample from a different density: $Y \sim g$, such that

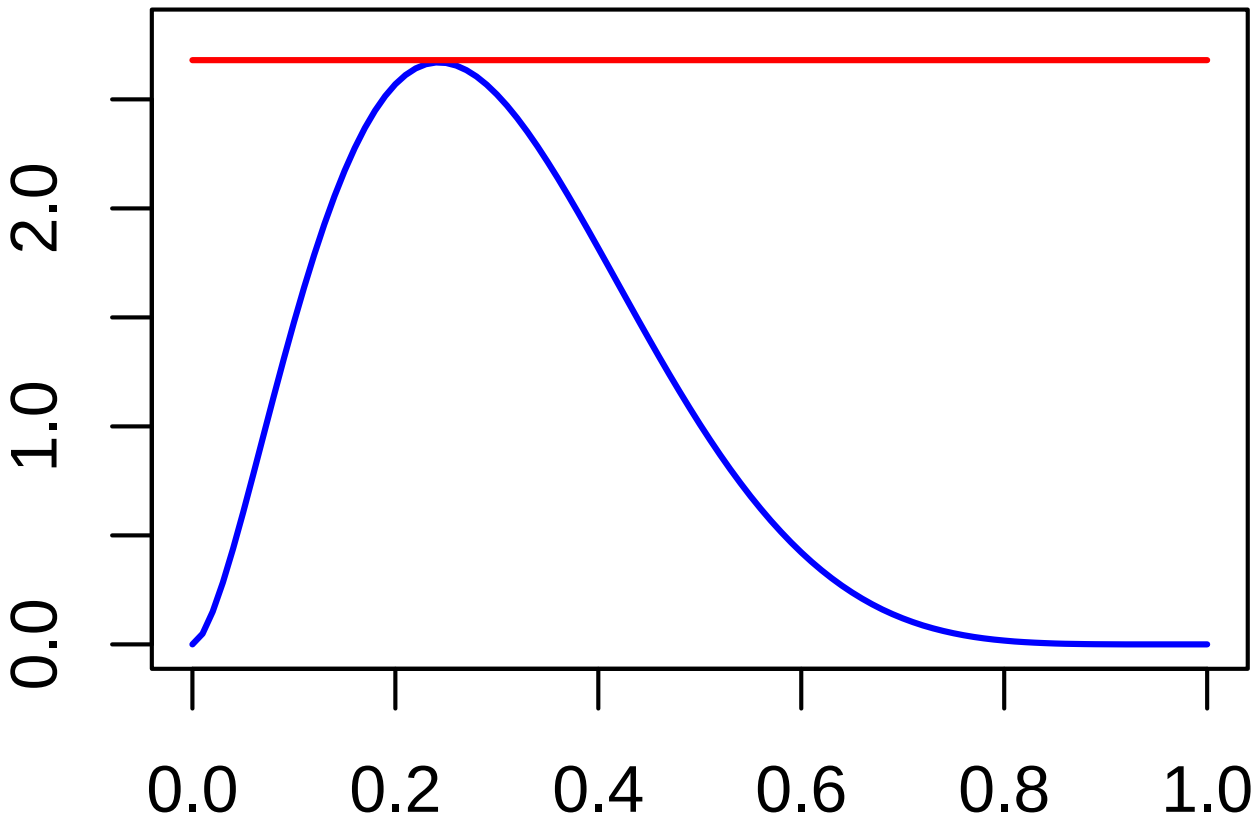
$$\frac{f(t)}{g(t)} \leq c \qquad \text{for all } t \text{ where } f(t) > 0$$

Do the following:

1. Sample $Y \sim g$
2. Sample $U \sim \mathit{Uniform}(0, 1)$
3. If $U \leq \dfrac{f(Y)}{cg(Y)}$, set $X = Y$. Otherwise, return to step 1.

Illustration

- $Y \sim g$ and $U \sim Uniform(0, 1)$
- *Accept* Y if $U \leq \frac{f(Y)}{cg(Y)}$



Why does this work?

Homework 3

https://sta379-s25.github.io/homework/hw3.html

- Practice generating random variables
- Accept and submit coding portion of assignment on GitHub Classroom
- Collaboration encouraged on homework, but everyone must submit their own work and acknowledge collaborators