Acceptance · Rejection Method.

Let X and Y be two continuous r.v.s w/ pdf f_X and f_Y.
Assume that

$$\frac{f_X(x)}{f_Y(x)} \leq c \quad \text{for all } x$$

c: a constant.

We want to simulate n values, say, $x_1, x_2, \dots, x_n$ of the r.v. X.

We know how to simulate values of Y.

The acceptance · rejection method does the following:

Set index = 1.

Until index = n:

1. Simulate y from Y.
2. Simulate u from $U(0,1)$ independently from Y.
3. TEST $u \leq \frac{f_X(y)}{c \cdot f_Y(y)}$
   - Yes: $x_{index} = y$; index = index + 1
   - No: Reject y
4. Go back to the top.