4. The Compositio Method:

- The *Composition Method* applies to density functions that have the following structure (called a *mixture*):

$$f(x) = w_1 f_1(x) + w_2 f_2(x) + \ldots + w_n f_n(x)$$

where the $f_i(x)$ are density (or mass) functions and where $0 < w_i < 1, 1 \leq i \leq n, n > 0$ and $\sum_{i=1}^{n} w_i = 1$

- The sampling algorithm is straightforward:
  - Pick i w.p. w_i (discrete distribution sampling)
  - Sample the distribution whose density is f_i, e.g. using one of the above methods

This applies also to cdfs and mass functions with a similar algorithm.