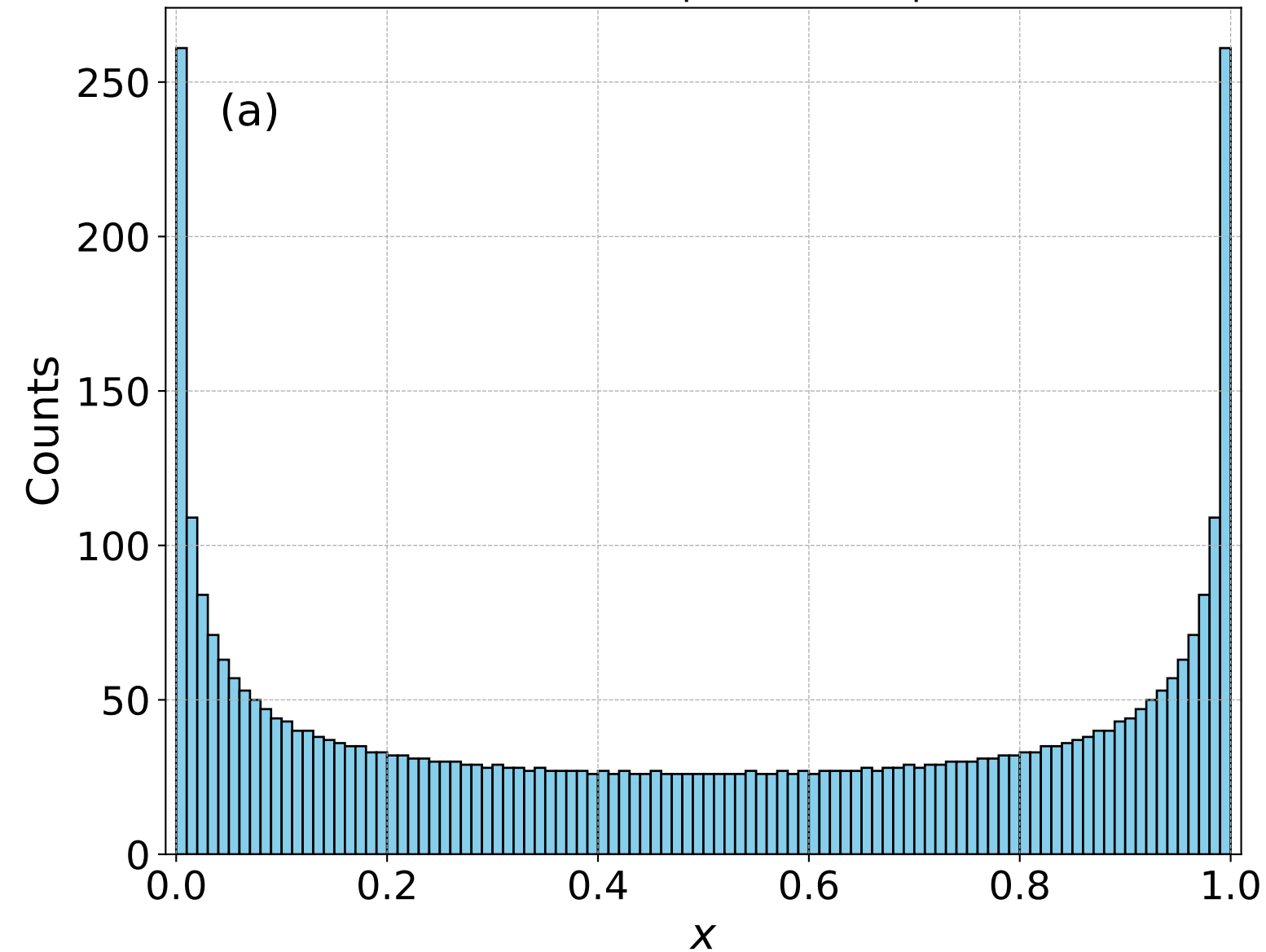**(a)** Distribution of representative points

(b) Probability density

Legend:
- Normilized histogramm
- Analytical density $\rho(x) = \dfrac{1}{\pi\sqrt{x(1-x)}}$