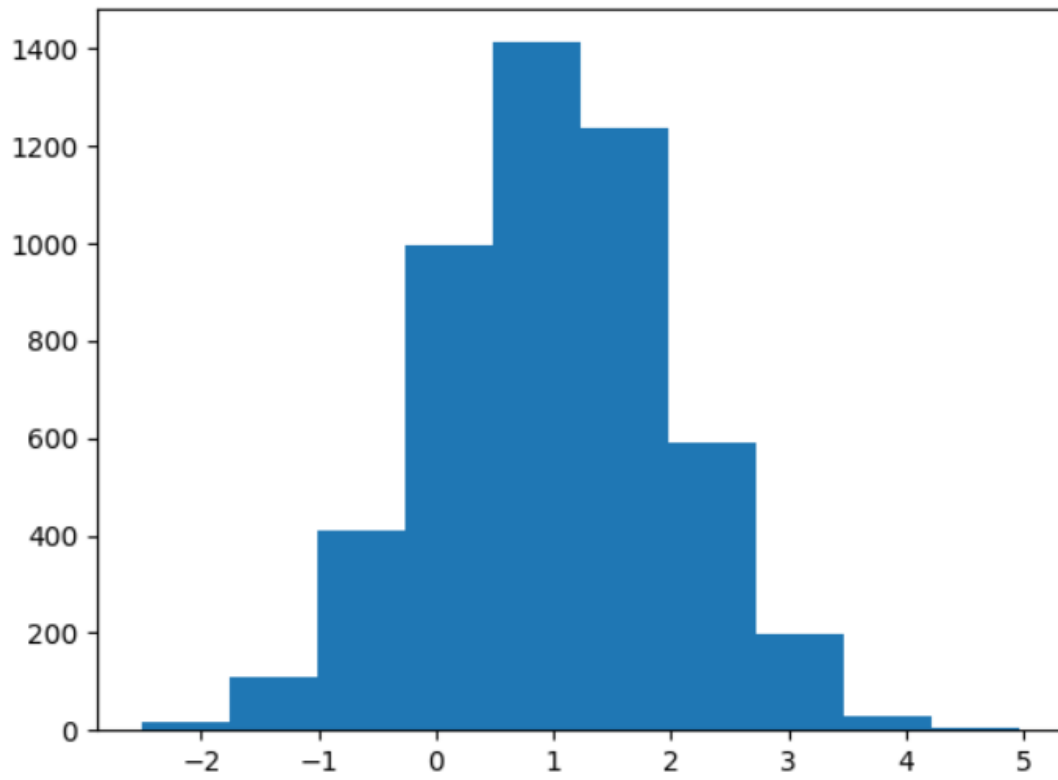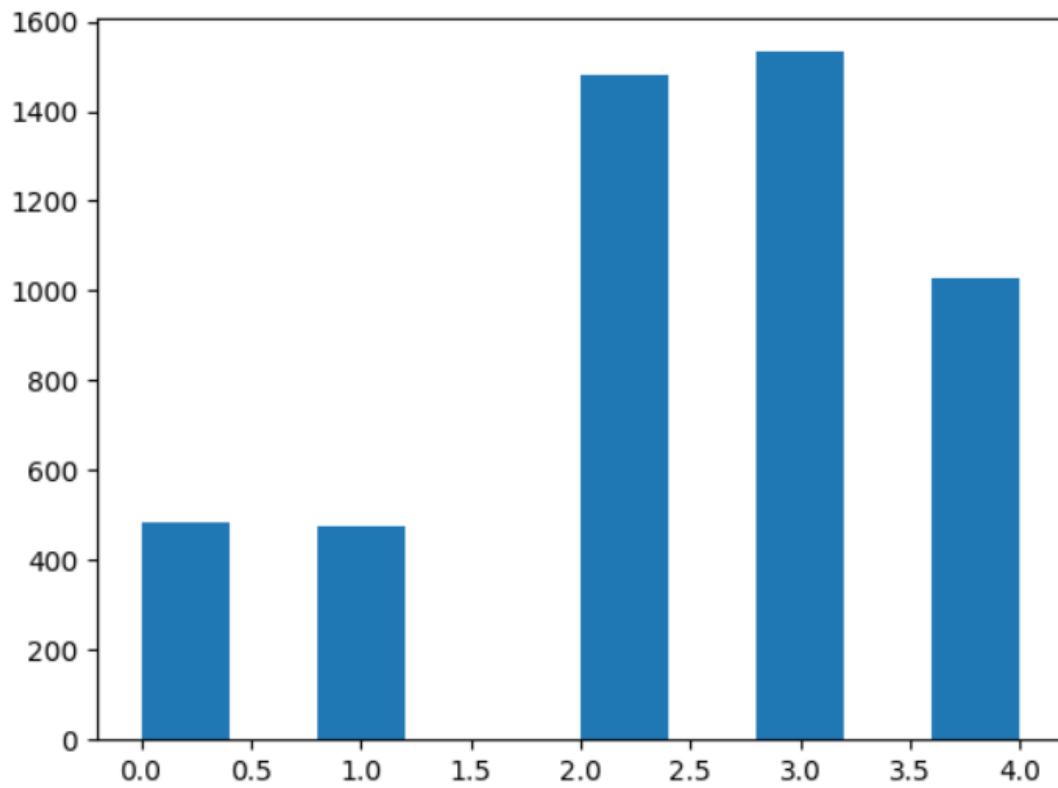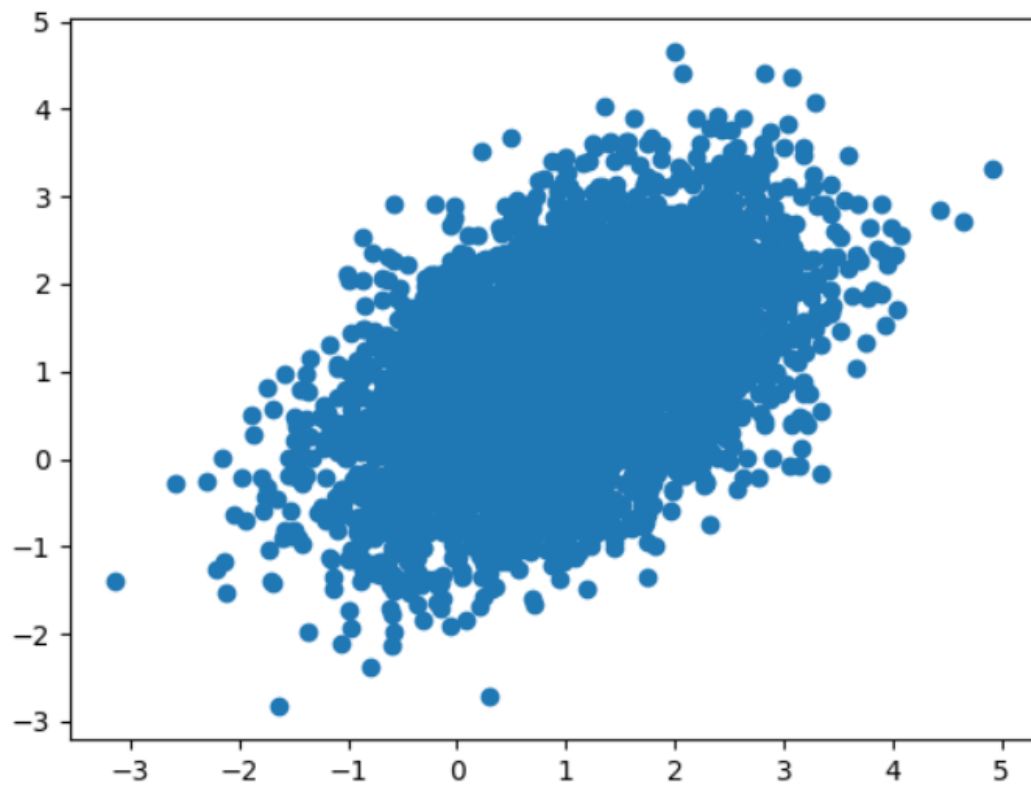Univariate normal distribution with mean of an standard deviation of 1
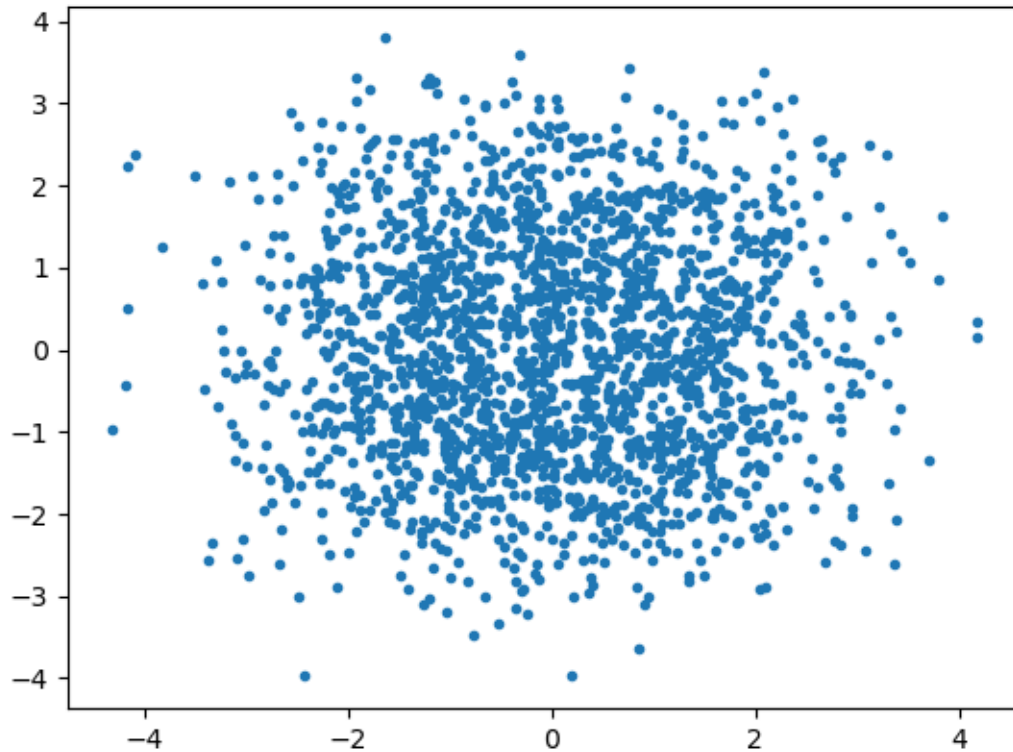
Histogram of samples generated by a categorical distribution with probabilities [0.1, 0.1, 0.3, 0.3, 0.2]

Scatter plot of the samples for a 2-D Gaussian with mean at [1, 1] and a covariance matrix [[1, 0.5], [0.5, 1]]

equal-weighted mixture of four Gaussians in 2 dimensions, centered at (1,1), (1,-1), (-1,1) and (-1,-1), and having covariance I.

If we draw a unit circle centered at (0.1,0.2), the probability of a sample lie in this circle is around 0.16 - 0.18