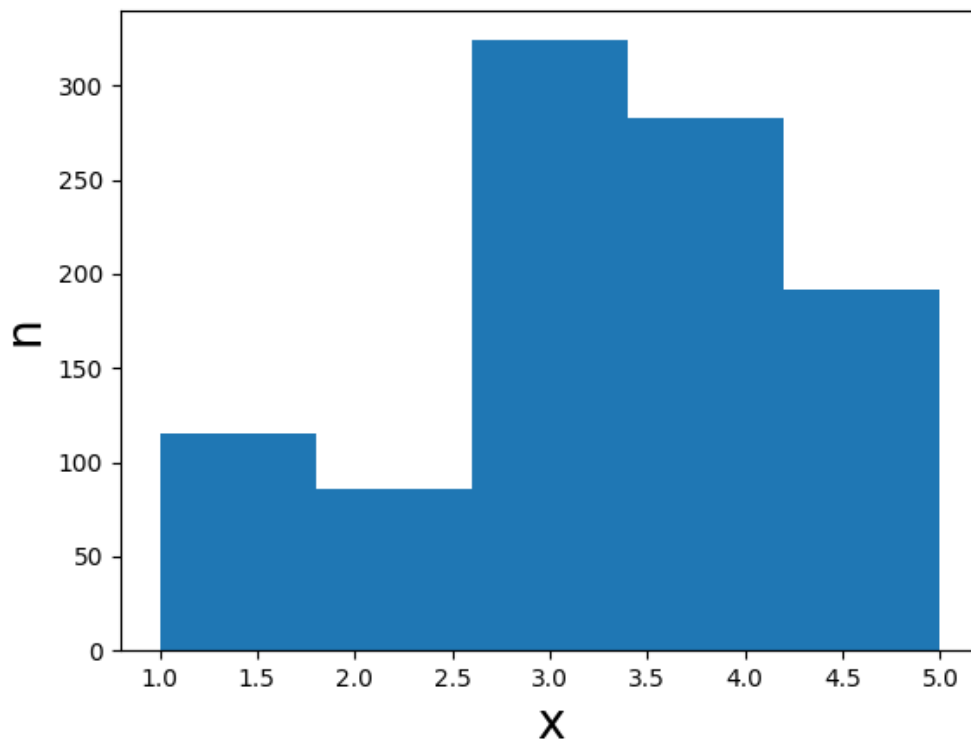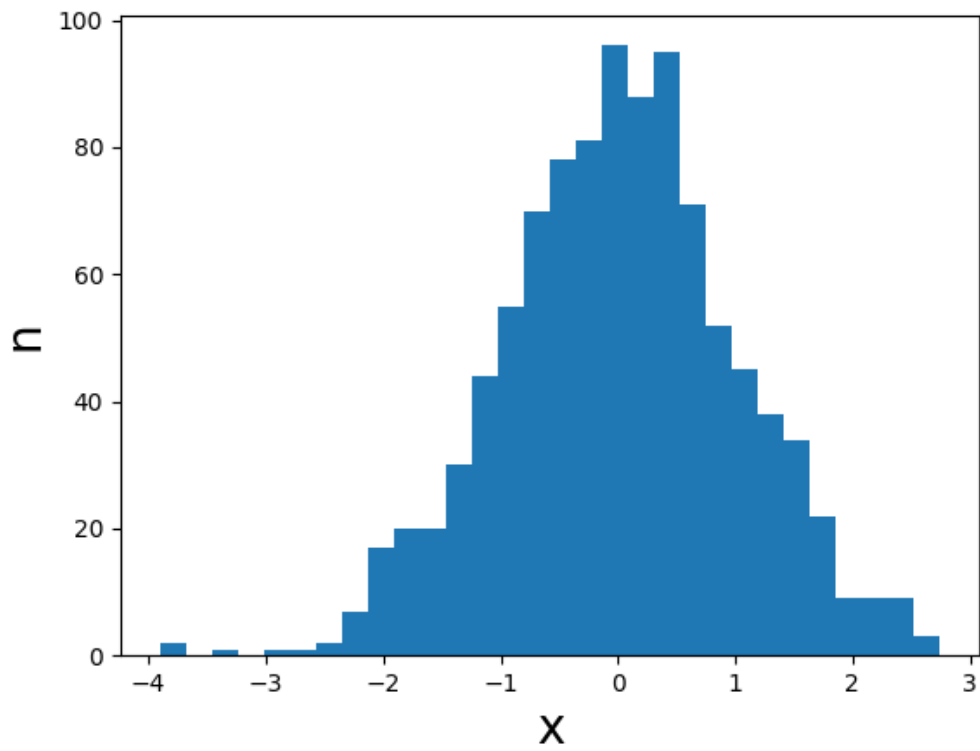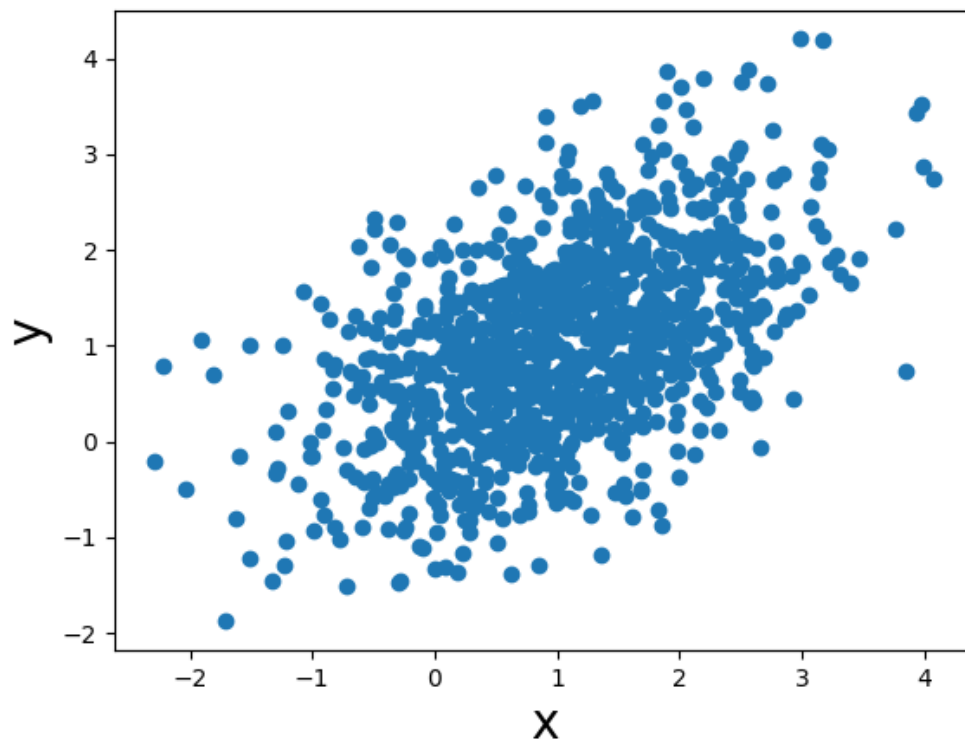Categorical distribution:

Univariate normal distribution:

2-D Gaussian distribution:

Mixture distribution: