

15.1: Generating Random Samples (Section @ref{generating-random-numbers})

Here we will generate random samples from a number of different distributions and plot their histograms.

```
nsamples <- 10000
nhistbins <- 100

# uniform distribution

p1 <-
  tibble(
    x = runif(nsamples)
  ) %>%
  ggplot(aes(x)) +
  geom_histogram(bins = nhistbins) +
  labs(title = "Uniform")

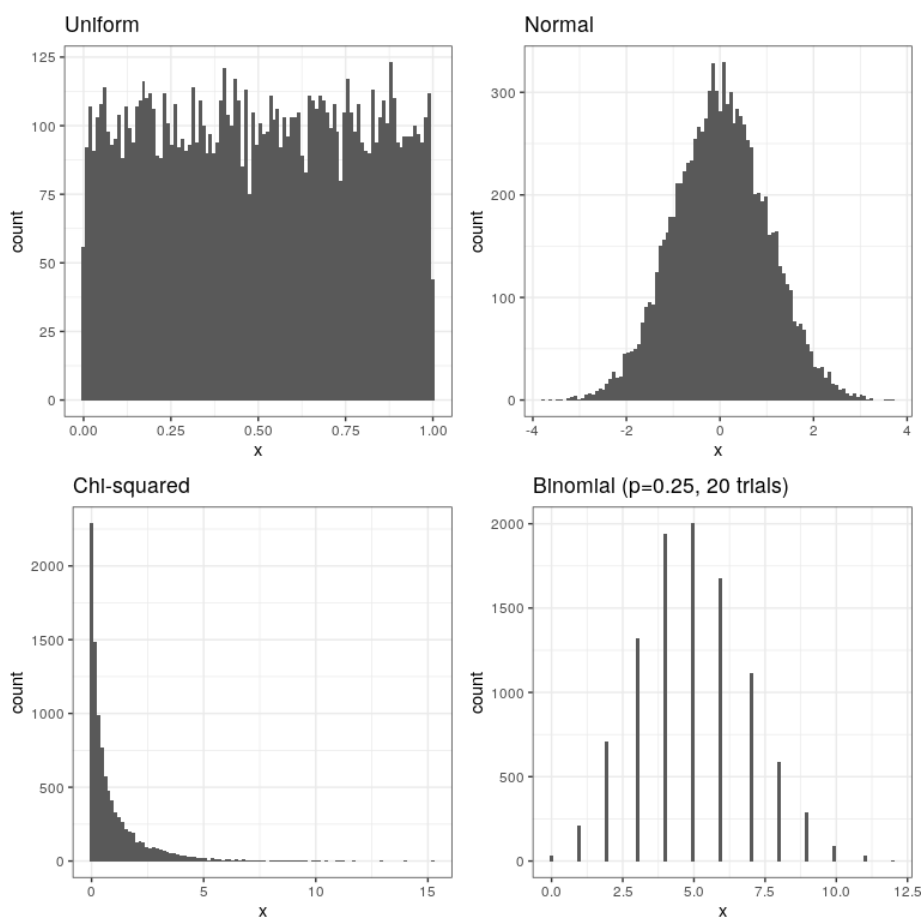
# normal distribution
p2 <-
  tibble(
    x = rnorm(nsamples)
  ) %>%
  ggplot(aes(x)) +
  geom_histogram(bins = nhistbins) +
  labs(title = "Normal")

# Chi-squared distribution
p3 <-
  tibble(
    x = rnorm(nsamples)
  ) %>%
  ggplot(aes(x)) +
  geom_histogram(bins = nhistbins) +
  labs(title = "Normal")

# Chi-squared distribution
p3 <-
  tibble(
    x = rchisq(nsamples, df=1)
  ) %>%
  ggplot(aes(x)) +
  geom_histogram(bins = nhistbins) +
  labs(title = "Chi-squared")

# Poisson distribution
p4 <-
  tibble(
    0.25 x = rbinom(nsamples, 20, )
  ) %>%
  ggplot(aes(x)) +
  geom_histogram(bins = nhistbins) +
  labs(title = "Binomial (p=0.25, 20 trials)")

plot_grid(p1, p2, p3, p4, ncol = 2)
```



This page titled [15.1: Generating Random Samples \(Section @ref{generating-random-numbers}\)](#) is shared under a [CC BY-NC 4.0](#) license and was authored, remixed, and/or curated by [Russell A. Poldrack](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.