csci297b Exercise 10
facets

- For this project, use the `tidyverse` library, which includes the `mpg` dataset.
- For this project, you will turn in a single R markdown file, called `exercise10.Rmd`

1. What happens if you facet on a continuous variable?

2. What do the empty cells in plot with `facet_grid(drv ~ cyl)` mean? Run the following code. How do they relate to the resulting plot?

```
ggplot(mpg) +
  geom_point(aes(x = drv, y = cyl))
```

3. What plots does the following code make? What does . do?

```
ggplot(mpg) +
  geom_point(aes(x = displ, y = hwy)) +
  facet_grid(drv ~ .)

ggplot(mpg) +
  geom_point(aes(x = displ, y = hwy)) +
  facet_grid(. ~ cyl)
```

4. Take the first faceted plot in this section:

```
ggplot(mpg) +
  geom_point(aes(x = displ, y = hwy)) +
  facet_wrap(~ class, nrow = 2)
```

   What are the advantages to using faceting instead of the `color` aesthetic? What are the disadvantages? How might the balance change if you had a larger dataset?

5. Read `?facet_wrap`. What does `nrow` do? What does `ncol` do? What other options control the layout of the individual panels? Why doesn't `facet_grid()` have `nrow` and `ncol` arguments?

6. Which of the following plots makes it easier to compare engine size (displ) across cars with different drive trains? What does this say about when to place a faceting variable across rows or columns?

```
ggplot(mpg, aes(x = displ)) +
  geom_histogram() +
  facet_grid(drv ~ .)

ggplot(mpg, aes(x = displ)) +
  geom_histogram() +
  facet_grid(. ~ drv)
```

7. Recreate the following plot using `facet_wrap()` instead of `facet_grid()`. How do the positions of the facet labels change?

```
ggplot(mpg) +
  geom_point(aes(x = displ, y = hwy)) +
  facet_grid(drv ~ .)
```