Data Visualization Lab

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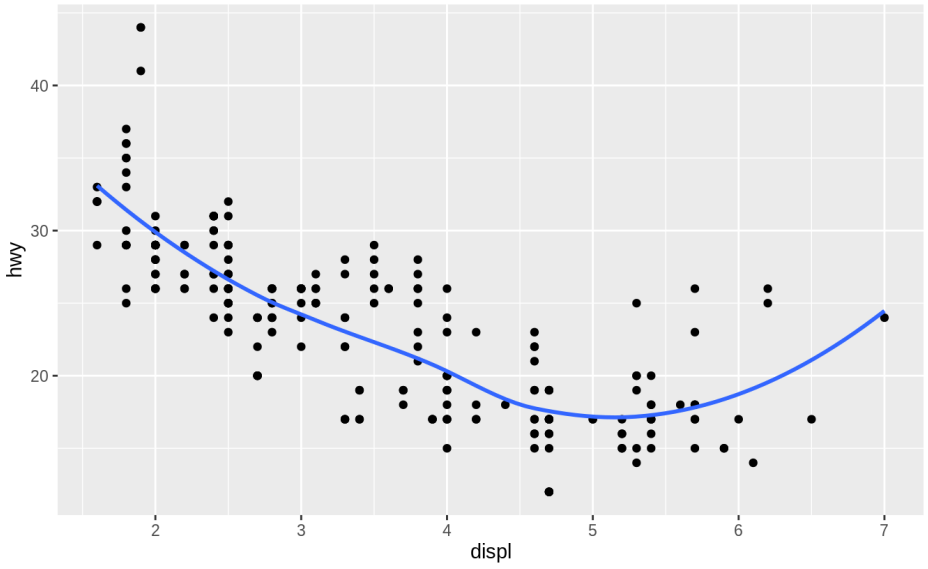
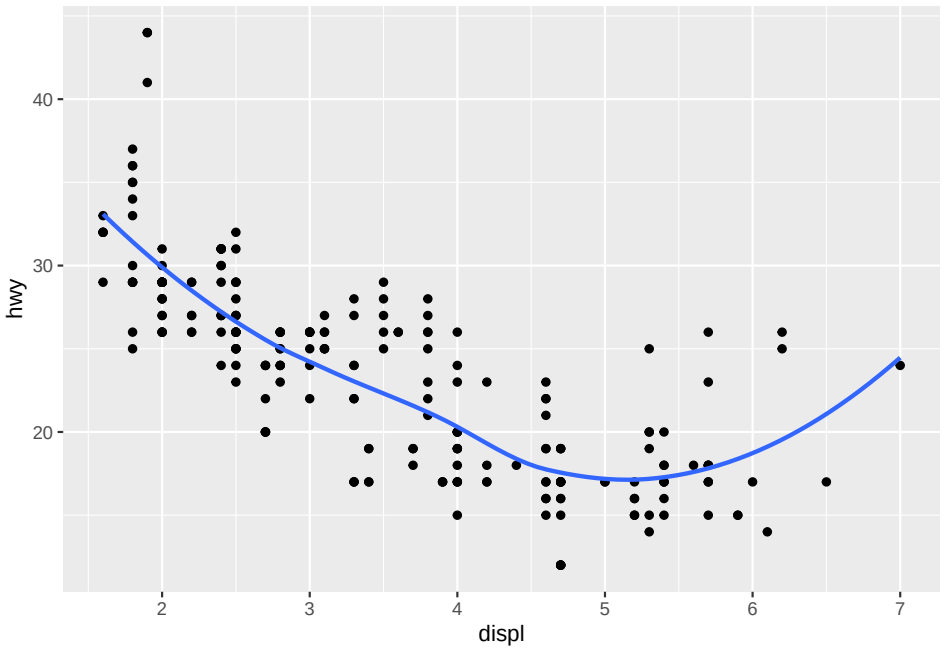
Question 1

This is the graph we need to reproduce:



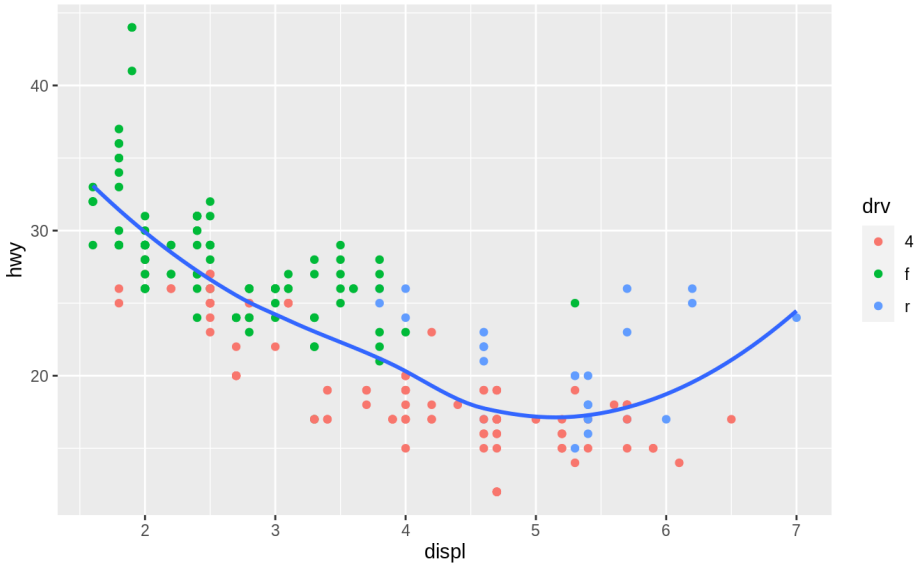
Here's how I recreate this plot:

```
# Plot data from `mpg`. x-axis corresponds to `displ`, and y-axis corresponds
# to `hwy`.
plot_1 <- ggplot(mpg, aes(x = displ, y = hwy))

# Create scatter plot.
plot_1 <- plot_1 + geom_point()

# Add smooth curve. Hide confidence interval.
plot_1 <- plot_1 + geom_smooth(se = FALSE)

# Show plot.
plot_1
```



Question 2

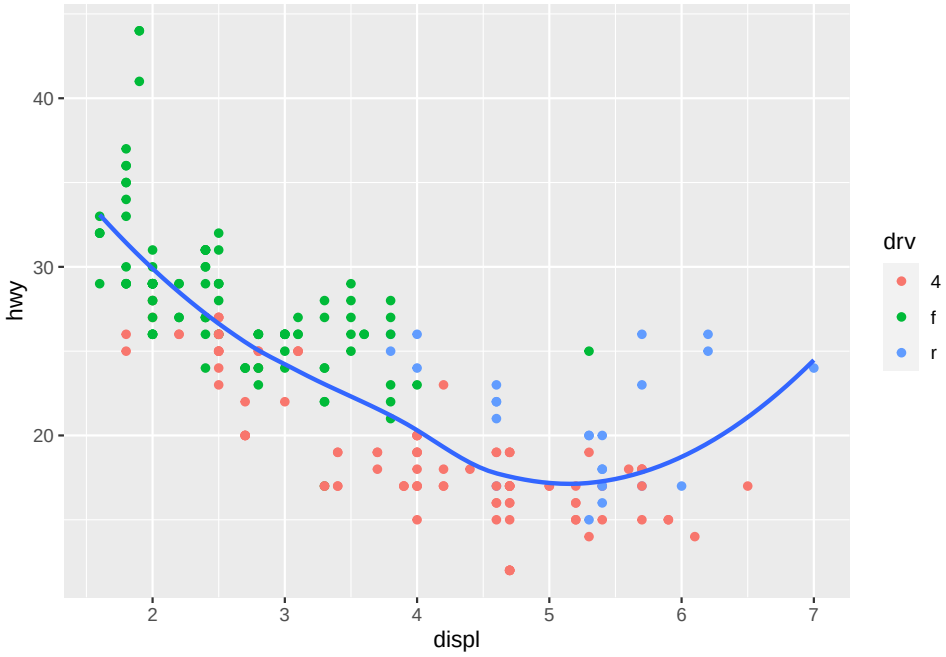
This is the graph we need to reproduce:



Here's how I recreate this plot:

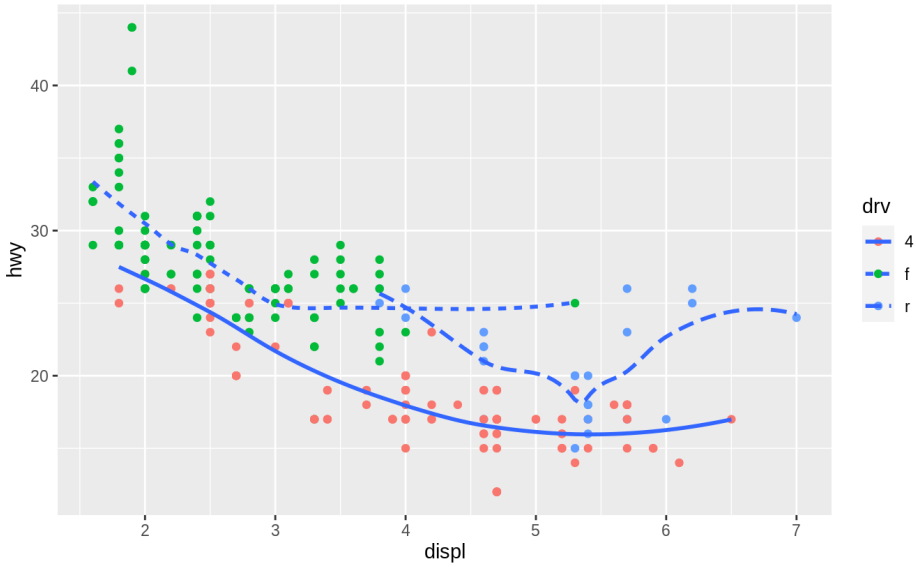
```
# Plot data from `mpg`. x-axis corresponds to `displ`, and y-axis corresponds
# to `hwy`.
plot_2 <- ggplot(mpg, aes(x = displ, y = hwy))

# Create scatter plot. Points will be colored according to `drv`.
plot_2 <- plot_2 + geom_point(aes(color = drv))

# Add smooth curve. Hide confidence interval.
plot_2 <- plot_2 + geom_smooth(se = FALSE)
```

```
# Show plot.
plot_2
```



Question 3

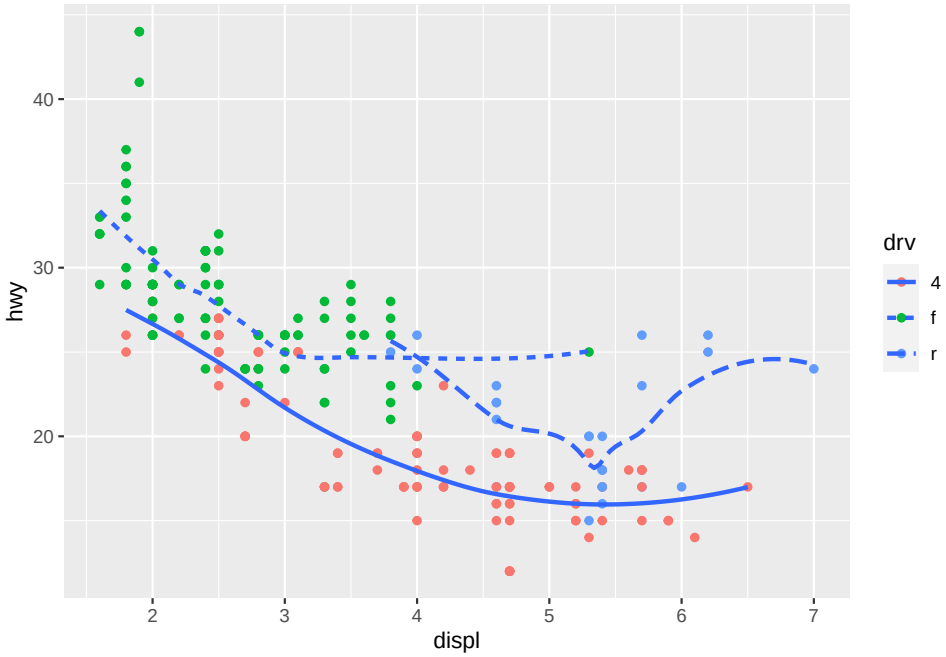
This is the graph we need to reproduce:



Here's how I recreate this plot:

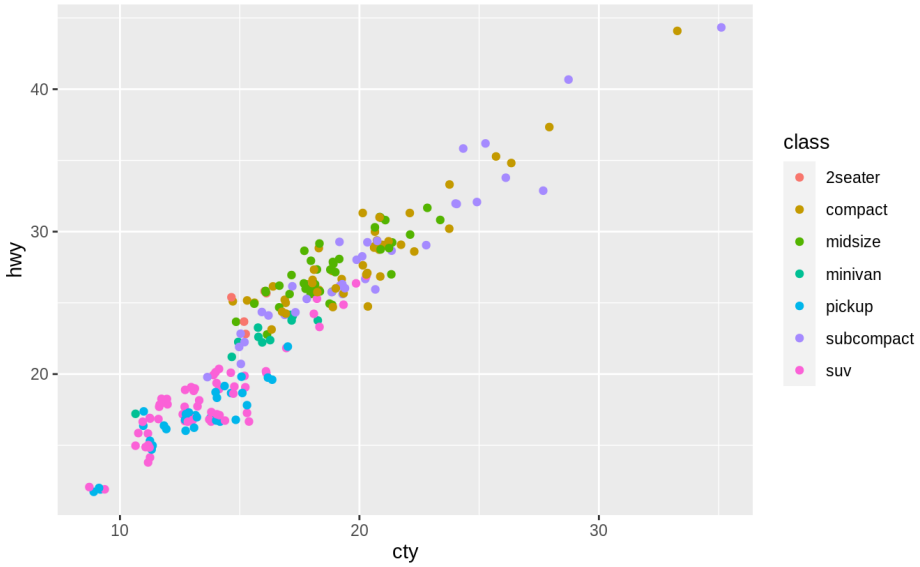
```
# Plot data from `mpg`. x-axis corresponds to `displ`, and y-axis corresponds
# to `hwy`.
plot_3 <- ggplot(mpg, aes(x = displ, y = hwy))

# Create scatter plot. Points will be colored according to `drv`.
```

```
plot_3 <- plot_3 + geom_point(aes(color = drv))

# Add smooth curve. Hide confidence interval. Use different line types for
# different values of `drv`.
plot_3 <- plot_3 + geom_smooth(aes(linetype = drv), se = FALSE)

# Show plot.
plot_3
```



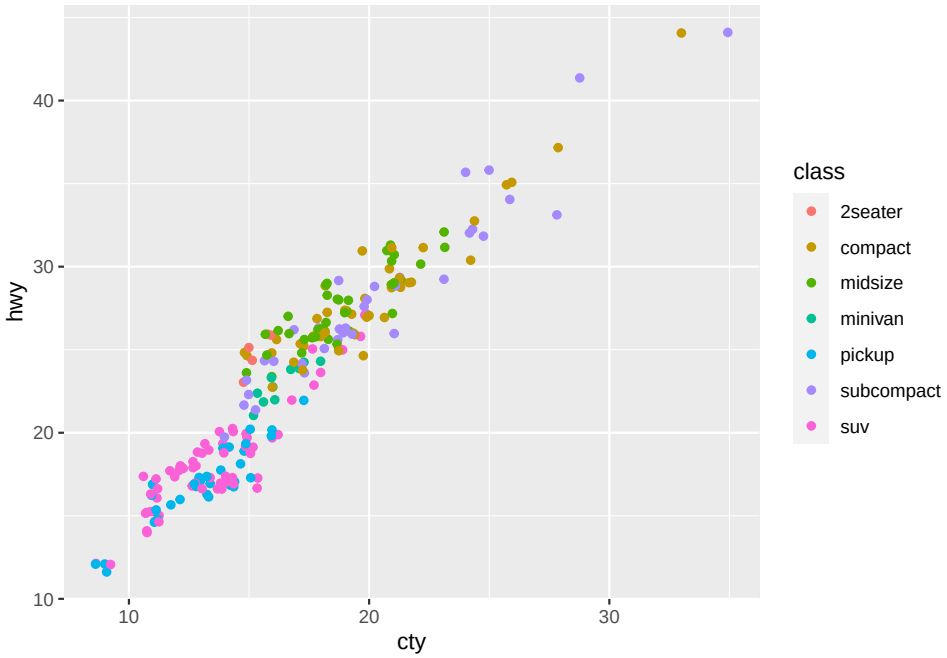
Question 4

This is the graph we need to reproduce:



Here's how I recreate this plot:

```
# Plot data from `mpg`. x-axis corresponds to `cty`, and y-axis corresponds to
# `hwy`.
plot_4 <- ggplot(mpg, aes(x = cty, y = hwy))

# Create scatter plot. Points will be colored according to `class`. Set
# position to "jitter".
plot_4 <- plot_4 + geom_point(aes(color = class), position = "jitter")

# Show plot.
plot_4
```



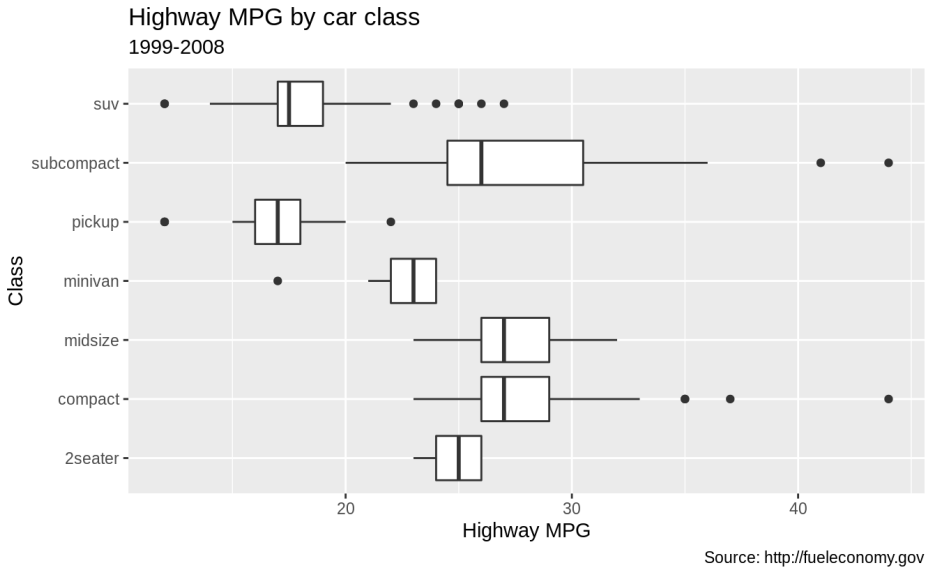
Notice that my figure isn't identical to the one we were given. This is expected. When we use `position = "jitter"`, a small amount of **random** variation is added to the location of each point. Due to this randomness, it's not possible to reproduce the original graph exactly.

Question 5

PLEASE READ:
There are two versions of this question. To be sure, I'll solve both versions of the problem.

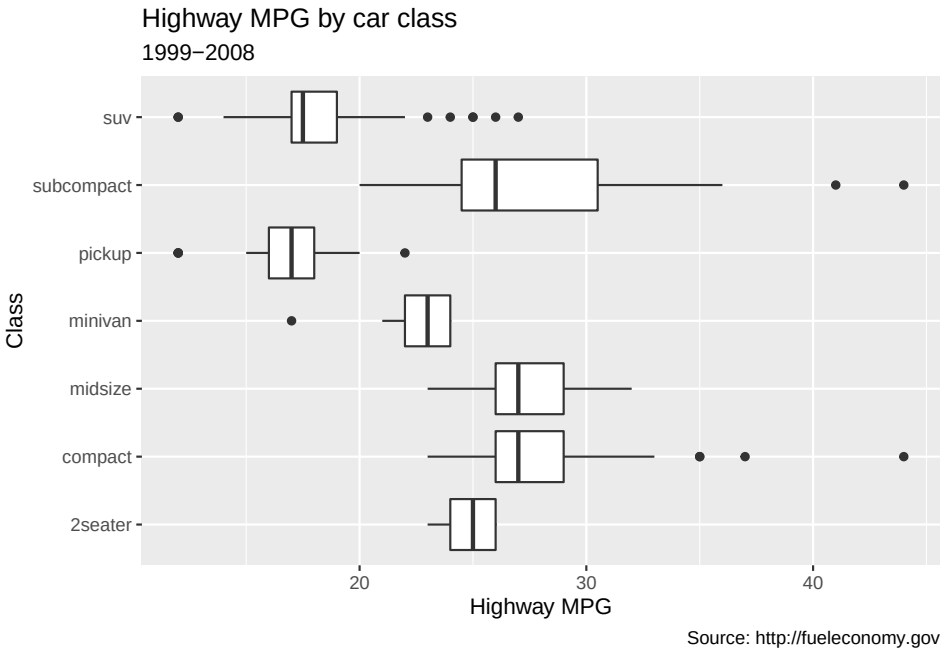
Version 1

This is the graph we need to reproduce:



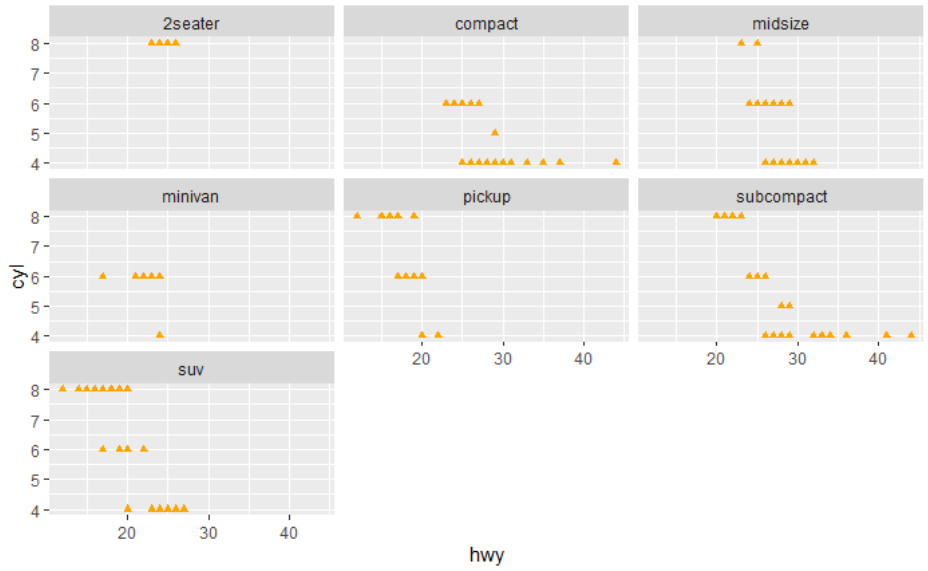
Here's how I recreate this plot:

```
# Plot data from `mpg`. x-axis corresponds to `hwy`, and y-axis corresponds to
# `class`.
plot_5 <- ggplot(mpg, aes(x = hwy, y = class))

# Create boxplots.
plot_5 <- plot_5 + geom_boxplot()

# Add labels.
plot_5 <- plot_5 + labs(
  x = "Highway MPG",
  y = "Class",
  title = "Highway MPG by car class",
  subtitle = "1999-2008",
  caption = "Source: http://fueleconomy.gov"
)

# Show plot.
plot_5
```



Version 2

This is the graph we need to reproduce:



Here's how I recreate this plot:

```
# Plot data from `mpg`. x-axis corresponds to `hwy`, and y-axis corresponds to
# `cyl`.
plot_5 <- ggplot(mpg, aes(x = hwy, y = cyl))

# Create scatter plot. Points will be represented by orange triangles.
plot_5 <- plot_5 + geom_point(shape = 24, color = "orange", fill = "orange")

# Create a panel for every value of `class`.
plot_5 <- plot_5 + facet_wrap(vars(class))
```

```
# Show plot.
plot_5
```