Homework 2

Key

1. Install the {nlme} package

2. Load {nlme}, {janitor}, and the {tidyverse} packages in the "setup" chunk

3. Run the chunk below to prep some data from the {nmle} package for plotting

```r
pd <- Oxboys %>%
  clean_names() %>%
  mutate(subject = factor(subject),
         occasion = factor(occasion)) %>%
  filter(subject == "10" | subject == "4" | subject == "7") %>%
  as_tibble()
```

4. Reproduce the following two plots, using the *pd* data. You can use whatever theme you want (I used `theme_minimal()`), but all else should be the same.

```r
theme_set(theme_minimal())

# Put code below for Plot 1. Note that Plot 1 is a line plot, not a "smooth."

ggplot(pd, aes(age, height)) +
  geom_line() +
  facet_wrap(~subject) +
  labs(title = "Plot 1")
```
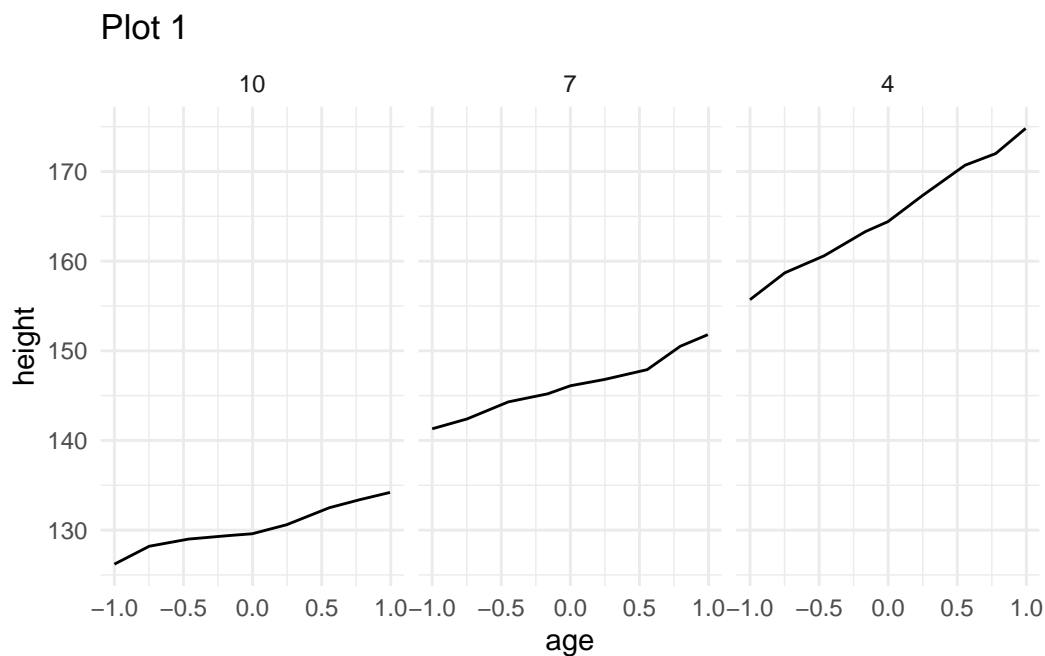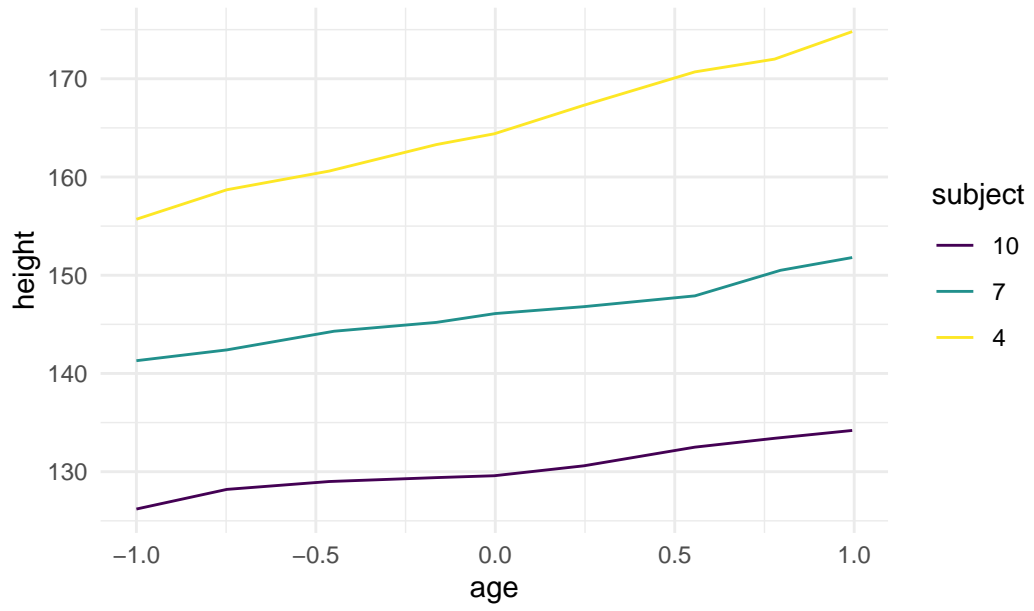


```r
# Put code below for Plot 2. Note that Plot 2 is a line plot also.

ggplot(pd, aes(age, height, color = subject)) +
  geom_line() +
  labs(title = "Plot 2")
```
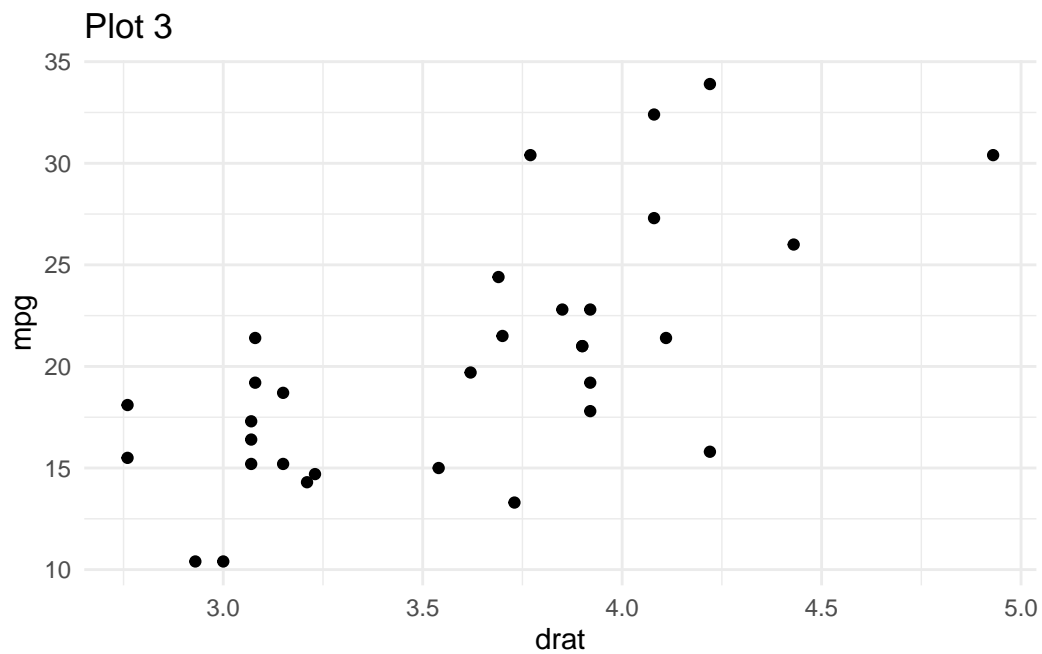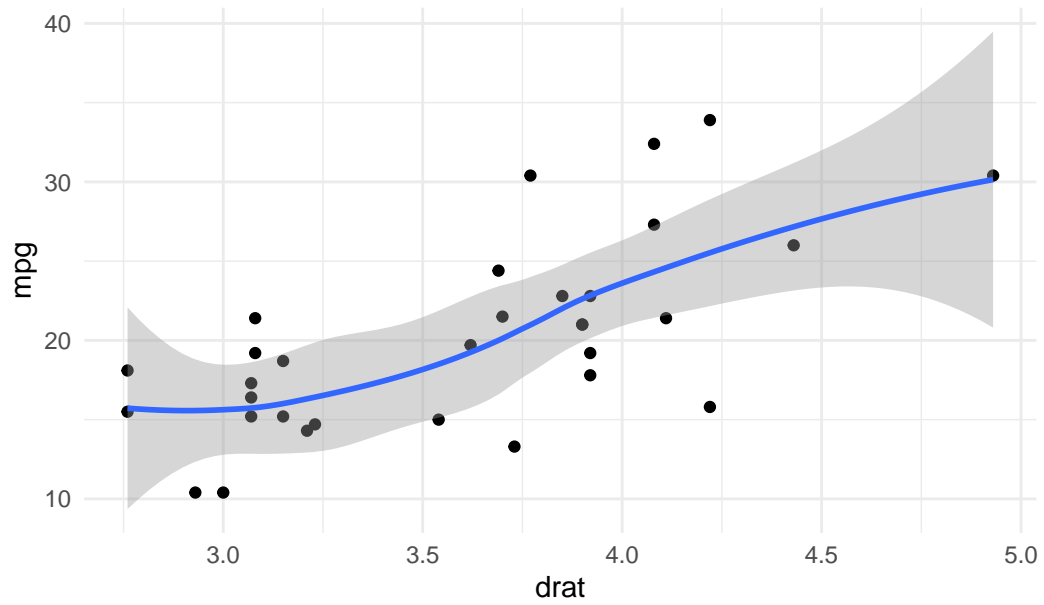
Plot 2

5. Use the *mtcars* dataset from base `R` to replicate the following plots. (Just type *mtcars* into the console to see the dataset).

```
# Put code below for Plot 3
ggplot(mtcars, aes(drat, mpg)) +
  geom_point() +
  labs(title = "Plot 3")
```
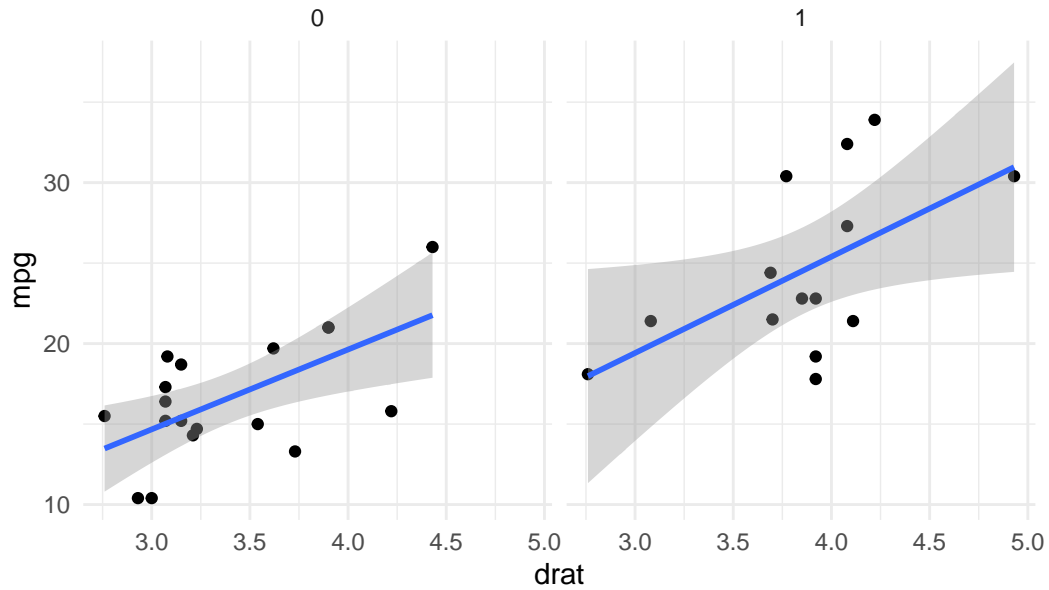


```
# Put code below for Plot 4
ggplot(mtcars, aes(drat, mpg)) +
  geom_point() +
  geom_smooth() +
  labs(title = "Plot 4")
```
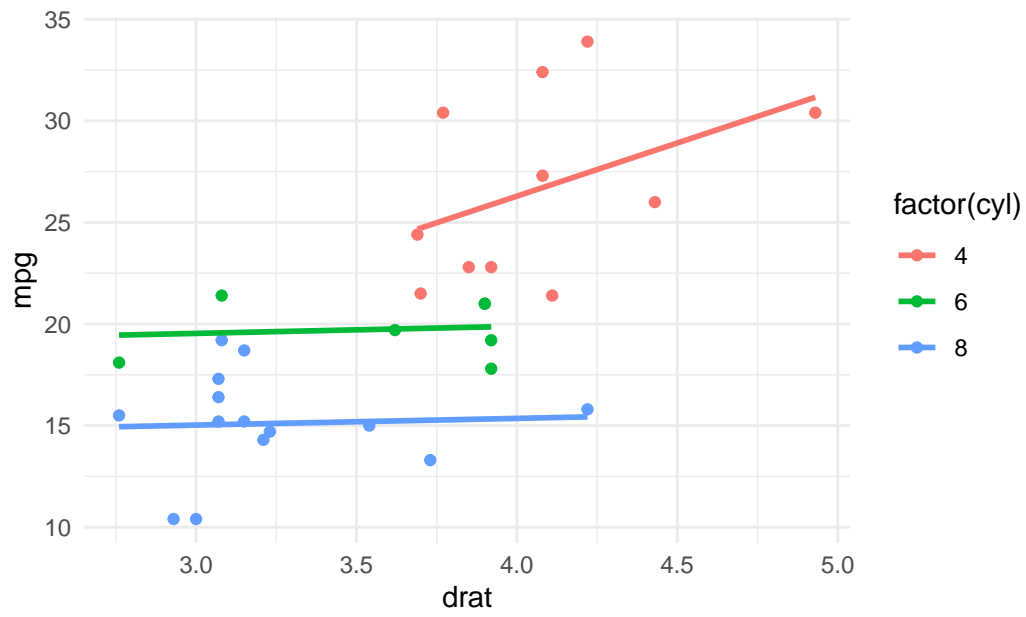
Plot 4


```
# Put code below for Plot 5
ggplot(mtcars, aes(drat, mpg)) +
  geom_point() +
  geom_smooth(method = "lm") +
  facet_wrap(~vs) +
  labs(title = "Plot 5")
```

Plot 5


```
# Put code below for Plot 6. I have given you the first line of code to start.
ggplot(mtcars, aes(drat, mpg, color = factor(cyl))) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE) +
  labs(title = "Plot 6")
```

Plot 6

6. Use the *Orange* dataset, also part of base `R`, to replicate the following plots.

```
# Put code below for Plot 7
ggplot(Orange, aes(age, circumference, color = Tree)) +
  geom_line() +
  geom_point() +
  labs(title = "Plot 7")
```
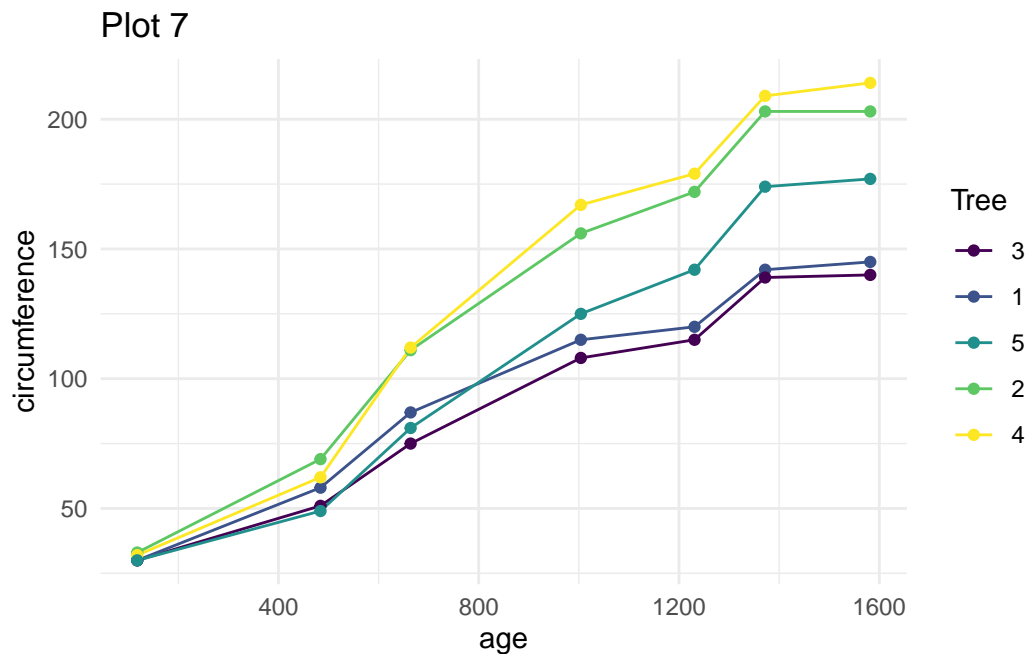


```
# Put code below for the last plot. See slide xx from the w3 class for labels.
ggplot(Orange, aes(age, circumference)) +
  geom_smooth(method = "lm", se = FALSE, color = "gray40") +
  geom_point(aes(color = Tree), size = 3) +
  labs(x = "Age of the Tree (in days)",
       y = "Circumference of the Trunk (in mm)",
       title = "Orange Tree Growth",
       subtitle = "Gray line displays a linear model fit to the data.")
```

Orange Tree Growth

Gray line displays a linear model fit to the data.