Confidence intervals

Announcements

- HW 4 released, due next Friday
- Exam 1 released next Friday
  - Take home, 1 week to complete
  - Open note (anything from this course)
  - Closed internet
  - Closed other people
- Reminder: department seminar on Monday, 12pm - 1pm (Dr. Mine Cetinkaya-Rundel)
  - Can sign up to meet with the speaker 11 - 11:30

Wald vs. likelihood ratio tests

Confidence intervals

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 Sex_i + \beta_2 Age_i + \beta_3 SecondClass_i + \beta_4 FirstClass_i + \beta_5 Sex_i \cdot Age_i$$

```
...
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)   0.408232   0.330916   1.234 0.217337
## Sexmale      -1.163444   0.437622  -2.659 0.007848 **
## Age          -0.007186   0.011684  -0.615 0.538522
## Pclass2       1.191858   0.243233   4.900 9.58e-07 ***
## Pclass1       2.697561   0.295822   9.119  < 2e-16 ***
## Sexmale:Age -0.049851   0.014782  -3.373 0.000745 ***
...
```

How do I create a 95% confidence interval for β_3?

Wald confidence intervals

Confidence intervals for linear combinations

Class activity

https://sta712-f22.github.io/class_activities/ca_lecture_15.html