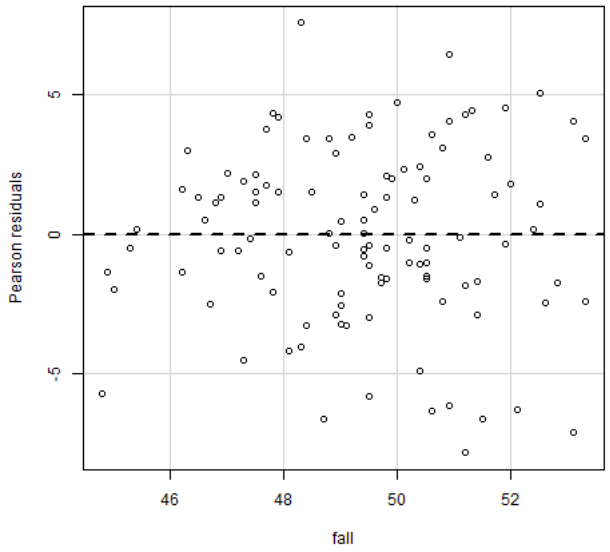
Week 4 homework problems

1. Do problem **2.6**. Skip part **2.6.4**.

2. For the data set in problem **2.6**, do the following.
   (a) Calculate a 95% confidence interval for the model intercept
   (b) Produce an effect plot for the effect of `fall` on the mean of `winter`
   (c) What are the values of the largest and smallest residuals?
   (d) Interpret the residual plot shown below in terms of the appropriateness of the linear model:



3. Do problem **2.13**.

4. For the data set in problem **2.13**, do the following.
   (a) Calculate the value of the correlation coefficient r
   (b) If the intercept-only model is fit to the data, what is its estimated intercept $\hat{\beta}_0$?
   (c) Produce the ANOVA table for this model. Be sure to include a "Total" row in your table.
   (d) If the predictor `mheight` is standardized before fitting the model, the resulting fitted model becomes $\hat{E}(Y) = 63.75 + 0.54 * x$. Interpret the slope and intercept in this model.