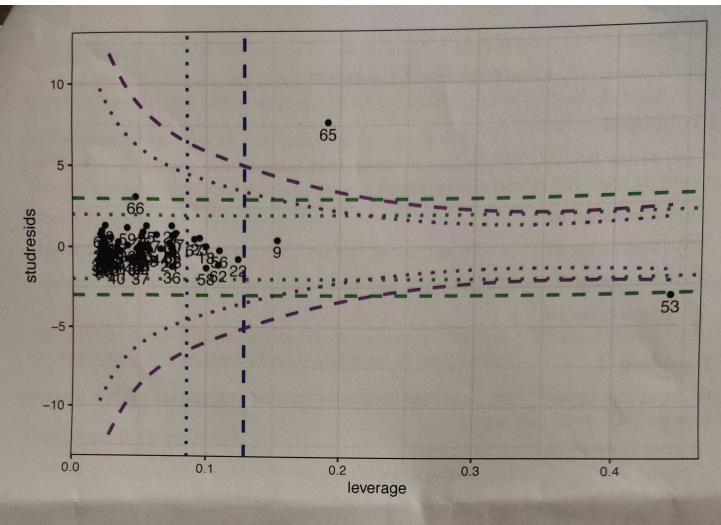
6a)



Problem 1

Which of the following statements are supported by the R output for this model? (Circle all that apply)

- (a) The effect of changing pH level of the soil has a greater impact on the biomass than changing the potassium level, given the location of the grass is the same.
- (b) The effect of changing the potassium level of the soil has a greater impact on the biomass than changing the pH level, given the location of the grass is the same.
- (c) The effect of changing the pH level of the soil on the biomass depends on the potassium level of the soil.
- d Comparing grass from soil with matching pH levels and matching potassium levels, grass from the Snows Marsh tends to have higher biomass than grass from Oak Island.

Problem 2

Which of the following represents a valid reduced model if we want to determine whether or not to include the categorical predictor for location? (Circle all that apply)

(a)
$$bio\hat{m}ass = \hat{\beta}_0 + \hat{\beta}_1 pH + \hat{\beta}_2 K + \hat{\beta}_4 LocationSM + \epsilon$$

(b)
$$biomass = \hat{\beta}_0 + \hat{\beta}_1 pH + \hat{\beta}_2 K + \hat{\beta}_4 LocationSM + \epsilon$$

6a) I would choose the third model since the residual plot for both the first and second model has a curved pattern. The residuals seem to be more randomly spread out with no obvious pattern. This makes model 3 more reliable. Likewise, the adjusted IR2 for model 3 is the lighest and it is comparable to the first two model or all other exilering

There is no relationship between hansnission type and fuel consumption. Ho: B2=B3=0

There is a relationship between transmission type and fuel consumption. HA: Some B2, B3 70

76) The reliability of statistical model depends upon whether the assumptions for fitting the model are met.

The test conducted in problem 6b is a t-test fince
the sessional plot shows a random distribution of residuals
and the quantile plot do not show any serious departure
from normality, I would say the test conducted in
problem 6b is more reliable

On the other hand, the lest in problem to is an 4-fest. So were need to look at the residual and quantile plats for both model I and model 3. Tince the residual plot for model I violates the linearity assumption and quantile plots shows more deviation than that for model 3, the test in 7a is less reliable.