# 1 Chapter 2

## 1.1 Notes

Notes Here.

## 1.2 Solutions

1.

(a) With large n and small p, a less flexible method may not use the large amount of observations available. A flexible method would be able to better estimate the true f, just like Figure 2.3 – 2.6. Caution must be taken not to over-fit the data.

(b) With small n and large p, a less flexible method may protect us from fluctuations in the observation due to small n.

(c) A nonlinear relationship between p and the response, may require a more flexible method as in shown in Figure 2.11.

(d) Highly flexible methods would be prone to over-fit ( i.e. fit the errors)

2.

(a) Since salaries are continuous, this is better analysed through a regression. Seeking relationship between response and a given predictor : inference. n = 500. p = profit, number of employees, and industry.

(b) Success or Failure is binary $\rightarrow$ category. Only interested in outcome: Prediction. n = 20, p = price charged for the product, marketing budget, competition price, and ten other variables.

(c) Prediction of value: regression. n = 3, p = U.S. market, British and German market.