Some corrections from Johans’ office hour

Due to lack of understanding on two problems, some students visited my office hour on Tuesday morning misguided. Here are the corrections for the two problems.

- **Problem 9.12.32**
  - (c) According to the answer sheet on Problem 9.9.31, you have
    \[
    -2\log\Lambda \approx \sum_{i=1}^{m} \frac{(X_i - n_i\bar{p})^2}{n_i\bar{p}(1-\bar{p})},
    \]
    noting your $X_i$ should be the result of each individual, not each category, hence your $m$ should be 280, $X_i$ be one of the number \{0, 1, \ldots, 5\} and $\bar{p}$ be the maximum likelihood estimator of the $p$ introduced in the problem.

- **Problem 9.12.47**
  - In my explanation, $y-$ axis of normal plot was mistakenly considered as the probability itself, not quantiles. On the same principle explained in the office hour, if you consider the quantiles instead of the cumulative probability, you will reach the answer of the text book. For example, as for the left tail, since the cauchy has heavy tail, $P[\text{Cauchy} | a]$ is bigger than $P[\text{Normal} | a]$ which means (alpha-) the quantile of cauchy is smaller than that of the normal distribution. And the similar rule works for the right tail.