MATH 3080: Statistical Report Assignment No.6

For each study produce a statistical report.

1. (Sample assignment problem.) A study tried to examine if the amount of food influences (normal or excessive) the risk of feline lower urinary tract diseases in cats. The data set is available at e-Statistics. Go under the title “Textbook Data Sets” → “Urinary tract disease.”

|  |  |  |
| --- | --- | --- |
| Group | Disease | Nondisease |
| Normal | 8 | 17 |
| Excessive | 42 | 7 |

Study Questions:

* 1. Is there significant difference in proportion of cats with disease between the normal and the excessive eating behavior? Perform a test for proportion as well as an exact test in R. What is your conclusion?
  2. Visualize data, and perform a chi-square test for homogeneity in R. What is your conclusion?

1. Water sample from wells in the north of a city were tested, and it was found that 17 of them met quality standards for drinking water, and 33 of them did not meet. Other samples were taken from the south of the city, and it was found that 18 met the standards and 13 did not meet.

The data set is available at e-Statistics. Go under the title “Worksheet Data Sets” → “Water Quality Standards.”

*Study Questions:*

* 1. Can the city conclude that the proportion of wells that meet the standards differs between the two areas?
  2. Present a chi-square test for homogeneity, and advise the city regarding their conclusion.