

Assignment 3

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```
## knitr configuration: http://yihui.name/knitr/options#chunk_options
opts_chunk$set(error= TRUE, warning = FALSE, message = FALSE,
               tidy = FALSE, cache = F, echo = T,
               fig.width = 4, fig.height = 4, fig.align="center")
library(DAAG)

## Loading required package: lattice
```

1 Question 1: Problem 1.2 in book

The `orings` data frame gives data on the damage that had occurred in US space shuttle launches prior to the disastrous Challenger launch of January 28, 1986. Only the observations in rows 1, 2, 4, 11, 13, and 18 were included in the pre-launch charts used in deciding whether to proceed with the launch.

Create a new data frame by extracting these rows from `orings`, and plot total incidents against temperature for this new data frame. Obtain a similar plot for the full data set.

2 Question 2: Problem 1.11 in book

Explain the output from the final `table(gender)`.

```
gender <- factor(c(rep("female", 91), rep("male", 92)))
table(gender)

## gender
## female    male
##      91      92

gender <- factor(gender, levels=c("male", "female"))
```

```

table(gender)

## gender
##   male female
##    92     91

gender <- factor(gender, levels=c("Male", "female"))
table(gender)

## gender
##   Male female
##    0     91

rm(gender)                                # Remove gender

```

3 Question 3: Endogeneity

1. When do we have a problem with endogeneity?
2. Show why reverse causality leads to endogeneity.
3. Discuss one empirical paper – what is the dependent variable, the independent variable. Is there a potential endogeneity problem? Of what kind (omitted variable bias, selection bias, reverse causality)?
4. Fun fact: Endogeneity can also be caused by measurement error and simultaneity bias.