流行病學與生物統計計算
Homework2
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一. Ex.8

Ex.8 : Given 50 students, odd-numbered students are boys, even are girls,
#(11, 16, 23, 31, 36, 47, 50) pass midterm
#(3, 9, 16, 20, 27, 31, 36, 49, 50) pass final

```
# Ex.8-1 : boys who passed midterm and final
midterm <- c(11, 16, 23, 31, 36, 47, 50)
final <- c(3, 9, 16, 20, 27, 31, 36, 49, 50)
boy <- seq(1, 50, by = 2)
girl <- seq(2, 50, by = 2)
intersect(intersect(midterm, final), boy)
    # no.31

# Ex.8-2 : girls who passed midterm and final
intersect(intersect(midterm, final), girl)
    # no.16, no.36, no.50

# Ex.8-3 : boys who passed midterm but failed final
setdiff(intersect(boy, midterm), final)
    # no.11, no.23, no.47

# Ex.8-4 : girls who passed final but failed midterm
setdiff(intersect(girl, final), midterm)
    # no.20
```

二. Ex.9

```
# Ex.9 write a function to estimate regression coefficients
   getwd()
   setwd("/Users/raymond/Desktop/R/")
   seizure <- read.csv("seizure.csv")
   x <- matrix()
   y <- matrix()
   simp_reg <- function(x, y) {
         X <- cbind(rep(1, nrow(seizure)), x)
         Y <- y
         return(solve(t(X) %*% X) %*% t(X) %*% Y)
   }
   simp_reg(seizure$ltime, seizure$y)
         #intercept : -3.922414
         #slope : 15.906957
```