```
> #2020/11/20(五), 109 學年第一學期 資料科學應用 R 小考(1)
> #學號:A107260036 姓名:顏郁芹
> #ex.1(a)
> x <- read.csv("Calculus-score-A.csv",skip=2)
> names(x) <- c("座號", "學號", "姓名", "性別", "quiz(1)", "quiz(2)", "quiz(3)",
"quiz(4)", "TA", "MidtermExam", "FinalExam" ,"Attendance")
> head(x, 5)
  座號       學號   姓名 性別 quiz(1) quiz(2) quiz(3) quiz(4)   TA
MidtermExam
1    1 401405008 希瑄彥   男       10       0       5       20  0.0
55
2    2 401550880 張泓丞   男       25      40      70       87 80.0
46
3    3 404550061 張安婕   女       18      15      48       33 86.7
54
4    4 404550042 柯政學   男       10      10      NA       NA 13.3
2
5    5 404550023 謝文躍   女       35      45      52       97 86.7
55
  FinalExam Attendance
1        50          2
2        68          9
3        79          9
4         0          7
5        67          9
> tail(x, 5)
  座號       學號   姓名 性別 quiz(1) quiz(2) quiz(3) quiz(4)   TA
MidtermExam
36   36 404550369 陳王霖   女       55      73      92       73 100.0
72
37   37 404550420 何瑄穎   男       28      10      35        3  66.7
30
38   38 404550431 沈泓霏   女       15      25      53       67  93.3
29
39   39 404550442 許安霏   女       53      60      80       72 100.0
```

```
61
40     40 404550453 李政宜     男          80         100          85         100 100.0
95
     FinalExam Attendance
36           81          9
37            0          7
38           42          9
39           62          9
40          100          3
> library(readxl)
> y <- read_excel("Calculus-score-B.xls", skip=2)
New names:
* `0.070000000000000007` -> `0.070000000000000007...5`
* `0.070000000000000007` -> `0.070000000000000007...6`
* `0.080000000000000002` -> `0.080000000000000002...7`
* `0.080000000000000002` -> `0.080000000000000002...8`
> names(y) <- c("座號", "學號", "姓名", "性別", "quiz(1)", "quiz(2)", "quiz(3)",
"quiz(4)", "TA", "MidtermExam", "FinalExam" ,"Attendance")
> head(y, 5)
# A tibble: 5 x 12
    座號     學號 姓名   性別   `quiz(1)` `quiz(2)` `quiz(3)` `quiz(4)`       TA
MidtermExam
   <dbl>    <dbl> <chr> <chr>        <dbl>       <dbl>       <dbl>       <dbl> <dbl>
<dbl>
1        1 4.05e8 史文羽… 男              60          81         100          97
100                90
2        2 4.05e8 鄭樺妤… 男              80         100         100          92
100                92
3        3 4.05e8 張敬安… 男              10          40          62          93
100                65
4        4 4.05e8 何筑亦… 女              15          25          40          13
93.3               36
5        5 4.05e8 張　儀… 女              30          45          70          61
93.3               29
# … with 2 more variables: FinalExam <dbl>, Attendance <dbl>
```

```
> tail(y, 5)
# A tibble: 5 x 12
   座號     學號 姓名   性別   `quiz(1)` `quiz(2)` `quiz(3)` `quiz(4)`       TA
MidtermExam
  <dbl>    <dbl> <chr> <chr>        <dbl>       <dbl>       <dbl>       <dbl> <dbl>
<dbl>
1       51 4.05e8 鄭鈺尤… 女               80          85         100          85
100                89
2       52 4.05e8 楊宜路… 男               48          35          48          98
100                50
3       53 4.05e8 張渝妤… 男                0          38          60          40
87                 49
4       54 4.05e8 廖暄安… 男               50          70          20          85
100                54
5       55 5.00e8 楊毅亦… 女                5          35          45          55
87                 58
# … with 2 more variables: FinalExam <dbl>, Attendance <dbl>
> #ex.1(b)
> options("max.print" = 10000)
> x$"class" <- "A"
> y$"class" <- "B"
> score <- rbind(x, y)
> score[38:43,]
   座號         學號     姓名 性別  quiz(1) quiz(2) quiz(3) quiz(4)       TA
MidtermExam
38     38 404550431  沈泓霏    女         15         25         53         67    93.3
29
39     39 404550442  許安霏    女         53         60         80         72 100.0
61
40     40 404550453  李政宜    男         80        100         85        100 100.0
95
41      1 404550465  史文羽    男         60         81        100         97 100.0
90
42      2 404685071  鄭樺妤    男         80        100        100         92 100.0
92
```

```
43       3 404685084  張敬安      男          10          40          62          93 100.0
65
     FinalExam Attendance class
38           42          9        A
39           62          9        A
40          100          3        A
41           83          6        B
42           97          2        B
43           84          9        B
> #ex.1(c)
> score[is.na(score)] <- 0
> score$"學期成績" <- (score$"quiz(1)"*0.07 + score$"quiz(2)"*0.07 +
score$"quiz(3)"*0.08 + score$"quiz(4)"*0.08 + score$"TA"*0.15 +
score$"MidtermExam"*0.25 + score$"FinalExam"*0.30) + score$"Attendance"
> score$"學期成績" <- ifelse(score$"學期成績" >= 100, 100, score$"學期成績" )
> score$"學期成績"
  [1]  33.450  70.010  67.995  10.895  73.375  67.015  38.920  78.345
48.525  20.455
[11]  96.435  67.295  16.150  22.030  73.990  79.400   8.560  24.245
61.905  61.340
[21]  49.915  68.570  10.995  67.055  68.000  69.210  65.635  84.040
66.100  78.540
[31]  75.330  69.860  72.240  82.260  54.765  88.460  30.205  55.245
77.920  99.150
[41]  94.030  97.060  81.350  40.535  55.375  62.355  61.310  50.450
21.600  36.700
[51]  32.150  76.810  48.200  52.550  69.700  43.360  60.910  94.070
77.990  23.950
[61]  39.100  80.600  72.850  22.050  47.200  20.800  61.550  58.300
40.800  55.000
[71]  26.280  70.050  49.450  62.900  54.960  74.900  71.360  67.800
85.140  21.300
[81]  72.200  78.410  82.300  51.510  74.660  45.200  65.300  87.220
100.000  95.720
[91] 100.000  72.590  44.460  70.000  59.350
```

```
> #ex.1(d)
> subset(score, score$"學期成績" >= 55 & score$"學期成績"<60)
    座號       學號   姓名 性別 quiz(1) quiz(2) quiz(3) quiz(4)   TA
MidtermExam
38    38 404550431 沈泓霏   女       15       25       53       67 93.3
29
45     5 404685100 張　儀   女       30       45       70       61 93.3
29
68    28 404720722 楊佳聿   女       30       35       20       50 60.0
45
70    30 404720527 馨飛羽   男       15        0       45       65 93.0
44
95    55 499555916 楊毅亦   女        5       35       45       55 87.0
58
    FinalExam Attendance class 學期成績
38         42          9     A  55.245
45         48          4     B  55.375
68         63          9     B  58.300
70         44          7     B  55.000
95         60          3     B  59.350
> #ex.1(e)
> mean(score$"學期成績"[1:40])
[1] 58.84575
> mean(score$"學期成績"[41:95])
[1] 61.123
> bscore <- which(score[,4] == "男")
> mean(bscore)
[1] 51.23729
> gscore <- which(score[,4] == "女")
> mean(gscore)
[1] 42.69444
> #ex.1(f)
> q <- subset(score, 60 >score$"學期成績" & score[,13] =="A")
> length(q)/40
[1] 0.35
```

```
> W <- subset(score, 60 >score$"學期成績" & score[,13] =="B")
> length(W)/55
[1] 0.2545455
>
>
> #ex.2(a)
> set.seed(123456)
> Letters.code <- sample(LETTERS[1:5], 20, replace=T)
> Numbers.code <- ifelse(Letters.code%in%c("A","E"),1,ifelse(Letters.code =="C",2,3))
> Numbers.code
 [1] 3 3 3 1 1 3 3 2 2 1 2 3 3 1 1 3 1 2 3 2
> #ex.2(b)
> data <- data.frame(Letters.code, Numbers.code)
> data
   Letters.code Numbers.code
1             D            3
2             B            3
3             B            3
4             A            1
5             E            1
6             D            3
7             B            3
8             C            2
9             C            2
10            E            1
11            C            2
12            D            3
13            B            3
14            E            1
15            A            1
16            B            3
17            E            1
18            C            2
19            D            3
20            C            2
```

>