

2020/10/23(五), 109 學年第一學期 資料科學應用 R 作業(1)

學號:A107260009

姓名:鄭右琳

(請依照規定)貼上執行程式碼及執行結果。

詳見: R 程式作業繳交方式

<http://www.hmwu.idv.tw/web/teaching/doc/R-how-homework.pdf>

> # **ex1.7**

(a) > rep(LETTERS[1:5], 5:1)

```
[1] "A" "A" "A" "A" "A" "B" "B" "B" "B" "C" "C" "C" "D" "D" "E"
```

(b) > letters[c(seq(2,26,2),seq(1,26,2))]

```
[1] "b" "d" "f" "h" "j" "l" "n" "p" "r" "t" "v" "x" "z"
```

```
[14] "a" "c" "e" "g" "i" "k" "m" "o" "q" "s" "u" "w" "y"
```

(c) > z <- rep(c(1,-1),50)

> y <- 1:100

> require(MASS)

> fractions(z/y)

```
[1]      1    -1/2    1/3   -1/4    1/5   -1/6    1/7
[8]   -1/8    1/9  -1/10   1/11  -1/12   1/13  -1/14
[15]   1/15  -1/16   1/17  -1/18   1/19  -1/20   1/21
[22]  -1/22   1/23  -1/24   1/25  -1/26   1/27  -1/28
[29]   1/29  -1/30   1/31  -1/32   1/33  -1/34   1/35
[36]  -1/36   1/37  -1/38   1/39  -1/40   1/41  -1/42
[43]   1/43  -1/44   1/45  -1/46   1/47  -1/48   1/49
[50]  -1/50   1/51  -1/52   1/53  -1/54   1/55  -1/56
[57]   1/57  -1/58   1/59  -1/60   1/61  -1/62   1/63
[64]  -1/64   1/65  -1/66   1/67  -1/68   1/69  -1/70
[71]   1/71  -1/72   1/73  -1/74   1/75  -1/76   1/77
[78]  -1/78   1/79  -1/80   1/81  -1/82   1/83  -1/84
[85]   1/85  -1/86   1/87  -1/88   1/89  -1/90   1/91
[92]  -1/92   1/93  -1/94   1/95  -1/96   1/97  -1/98
[99]   1/99  -1/100
```

(d) > month.abb[c(seq(1,12,2),seq(2,12,2))]

```
[1] "Jan" "Mar" "May" "Jul" "Sep" "Nov" "Feb" "Apr" "Jun"
```

```
[10] "Aug" "Oct" "Dec"
```

> # ex1.23

(a) > R <- c(43, 94, 20, 8, 46, 72, 93, 8, 28, 33, 79, 60, 93, 52, 8)

> R

[1] 43 94 20 8 46 72 93 8 28 33 79 60 93 52 8

> math.score <- options()

> math.score

(b) > length(R)

[1] 15

(c) > a <- c(94,8,72,8,33,60,52)

> a

[1] 94 8 72 8 33 60 52

> mean(a)

[1] 46.71429

(d) > b <- R >= 60

> b

[1] FALSE TRUE FALSE FALSE FALSE TRUE TRUE FALSE FALSE

[10] FALSE TRUE TRUE TRUE FALSE FALSE

座號:2,6,7,11,12,13、6 位及格

> # ex1.37

(a) > R <- c(54,64,75,21,66,49,25,72,50,72,"女","男","男","女","女","男","男","女","男","女",86,30,NA,43,35,42,31,7,29,80,"滿意","非常滿意","非常不滿意","非常滿意","普通","非常不滿意","普通","滿意","普通","非常滿意")

> R

[1] "54"	"64"	"75"	"21"
[5] "66"	"49"	"25"	"72"
[9] "50"	"72"	"女"	"男"
[13] "男"	"女"	"女"	"男"
[17] "男"	"女"	"男"	"女"
[21] "86"	"30"	NA	"43"
[25] "35"	"42"	"31"	"7"
[29] "29"	"80"	"滿意"	"非常滿意"
[33] "非常不滿意"	"非常滿意"	"普通"	"非常不滿意"
[37] "普通"	"滿意"	"普通"	"非常滿意"

> X <- c("滿意","非常滿意","非常不滿意","非常滿意","普通","非常不滿意","普通","滿意","普通","非常滿意")

```
> X.factor <- factor(X)
> X.factor
[1] 滿意 非常滿意 非常不滿意 非常滿意 普通 非常不滿意
[7] 普通 滿意 普通 非常滿意
Levels: 非常不滿意 非常滿意 普通 滿意
(b)5 位
(c) > age <- c(54,64,75,21,66,49,25,72,50,72)
> gender <- c("女","男","男","女","女","男","男","女","男","女")
> index <- c(86,30,NA,43,35,42,31,7,29,80)
> d <- index[age >= 40 & gender == "男"]
> mean(b, na.rm = T)
[1] 0.4
```