A1.R

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```
#Assignment 1
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#Part 3
x <-scan(nmax = -1, text = "2 0 9 7 1 5 2 2 3 3 2 2 2 3 2 8 0 1 3 4 6")
length(x)
```

```
## [1] 21
```

```
sum(x)
```

```
## [1] 67
```

```
mean(x)
```

```
## [1] 3.190476
```

```
x <-scan(file = "/Users/kaylaippongi/Desktop/read_this_1.txt")
f = read.delim("/Users/kaylaippongi/Desktop/read_this_1.txt")
write.table(f, file="/Users/kaylaippongi/Desktop/read_this_1.csv",sep=",",col.names=FALSE,row.names=FALS
MyData <- read.csv(file="/Users/kaylaippongi/Desktop/read_this_1.csv", sep = "")

####################
#Part 4 - Exercises
##################
#Problem 1
  a <- seq(1, 20, by=1)
  b <- rev(a)
  c <- c(1:20, 19:1)
  tmp <- c(4,6,3)
  e <- rep(tmp, times=10)
  f <- rep(tmp, len = 31)
  g <- rep(tmp, c(10,20,30))
  output<-list(a,b,c,e,f,g)

#Problem 2
x <- seq(from = 3.0, to = 6.0, length.out = 30)
h <- exp(x)*cos(x)

#Problem 3
#Part a
x <- c(0.1,0.2)
i <- rep(x, times = 12)
j <- c(3,1,6,4,9,7,12,10,15,12,18,16,21,19,
       24,22,27,25,30,28,33,31,36,34)
result <- i^j

#Part b
x <- c(2)
```

```r
numerator <- c(x, times = 25)
denominator <- c(1:25)
result <- ((numerator)^numerator/denominator)
```

```
## Warning in (numerator)^numerator/denominator: longer object length is not a
## multiple of shorter object length
```

```r
#Problem 4
#Part a
i <- c(10:100)
result <- sum(i^3 + 4*(i^2))
#Part b
j <- c(1:25)
result2 <- sum(( (2^j)/j) + (3^j)/(j^2) )

#Problem 5
#Part a
x <-c(1:30)
paste("label", sep = " ", x)
```

```
##  [1] "label 1"  "label 2"  "label 3"  "label 4"  "label 5"  "label 6"
##  [7] "label 7"  "label 8"  "label 9"  "label 10" "label 11" "label 12"
## [13] "label 13" "label 14" "label 15" "label 16" "label 17" "label 18"
## [19] "label 19" "label 20" "label 21" "label 22" "label 23" "label 24"
## [25] "label 25" "label 26" "label 27" "label 28" "label 29" "label 30"
```

```r
#Part b
paste("fn", sep = "", x)
```

```
##  [1] "fn1"  "fn2"  "fn3"  "fn4"  "fn5"  "fn6"  "fn7"  "fn8"  "fn9"  "fn10"
## [11] "fn11" "fn12" "fn13" "fn14" "fn15" "fn16" "fn17" "fn18" "fn19" "fn20"
## [21] "fn21" "fn22" "fn23" "fn24" "fn25" "fn26" "fn27" "fn28" "fn29" "fn30"
```

```r
#Problem 6
set.seed(50)
xVect <- sample(0:999, 250, replace=T)
yVect <- sample(0:999, 250, replace=T)
#Part a
result_a <- yVect - xVect
#Part b
result_b <- sin(yVect)/cos(xVect)
#Part c
result_c <- xVect + 2*xVect - xVect
#Part d
sum( (exp(-xVect+1))/(xVect +10))
```

```
## [1] 0.09218706
```

```r
#Problem 7
#Part a
result_7a <- xVect[(xVect>600)]
#Part b
result_7b <- which(yVect>600)
#Part c
result_7c <- xVect[which(yVect>600)]
#Part d
result_7d <-c(abs(xVect-mean(xVect))^0.5)
```

```r
#Part e
result_7e <-which(yVect<(min(200)))
#Part f
result_7f <- sum(1-xVect%%2)
#Part g
result_7g <- sort(order(yVect)[xVect])
#Part h
indexes <-seq(from=1, to=250, by = 3)
result_7h <-yVect[indexes]

#Problem 8
num <- seq(from = 2, to= 38, by =2)
denom <- seq(from =3, to = 39, by =2)
cumprod(num/denom)
```

```
##  [1] 0.6666667 0.5333333 0.4571429 0.4063492 0.3694084 0.3409923 0.3182595
##  [8] 0.2995384 0.2837732 0.2702602 0.2585097 0.2481694 0.2389779 0.2307373
## [15] 0.2232941 0.2165276 0.2103411 0.2046562 0.1994087
```