

```
# addition of 2 vectors
```

```
k<-c(23,25,14,0,3,6,8)
```

```
p<-c(66,0,0,1,4,5,8)
```

```
s<-k+p
```

```
print(s)
```

```
## [1] 89 25 14 1 7 11 16
```

```
# multiplication of both the vectors
```

```
s<-k*p
```

```
print(s)
```

```
## [1] 1518 0 0 0 12 30 64
```

```
#division
```

```
s<-k/p
```

```
print(s)
```

```
## [1] 0.3484848 Inf Inf 0.0000000 0.7500000 1.2000000 1.0000000
```

```
#remainder of the first vector with the second
```

```
l<-k%%p
```

```
print(l)
```

```
## [1] 23 NaN NaN 0 3 1 0
```

```
# result of the division of first vector with the other vector
```

```
l<-k/%p
```

```
print(l)
```

```
## [1] 0 Inf Inf 0 0 1 1
```

```
# colon operator
```

```
a<-1:100
```

```
print(a)
```

```
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
```

```
## [19] 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
```

```
## [37] 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
```

```
## [55] 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72
```

```
## [73] 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
```

```
## [91] 91 92 93 94 95 96 97 98 99 100
```

```
# using the in operator to check if element is there or not
```

```
print(100%in%a)
```

```
## [1] TRUE
```

```
# matrix multiplication
m<-matrix(c(1,0,0,1),nrow=2,ncol=2,byrow=TRUE)
t<-m%*%t(m)
print(t)
```

```
##      [,1] [,2]
## [1,]    1    0
## [2,]    0    1
```

Control Structures

```
# if statments
if(10%in%a)
{
  print("we have done the if statments")
}else
{
  print("try again")
}
```

```
## [1] "we have done the if statments"
```

loops

```
# while loop
#+ setting a variable to some value and then iterating it to print until a desired value
#+ initiating the variable
i<-2
while(i)
{
  print(i+1)
  i<-i+1
  if(i==10)
  {
    break
  }
}
```

```
## [1] 3
## [1] 4
## [1] 5
## [1] 6
## [1] 7
## [1] 8
## [1] 9
## [1] 10
```

```
#R-repeat loop
a<-11
repeat{
  print(a+1)
  a<-a+1
  if(a>20)
  {
    break
  }
}
```

```
## [1] 12
## [1] 13
## [1] 14
## [1] 15
## [1] 16
## [1] 17
## [1] 18
## [1] 19
## [1] 20
## [1] 21
```

```
#for loop
v<-c(-1:10)
for(k in v)
{
  print(k)
}
```

```
## [1] -1
## [1] 0
## [1] 1
## [1] 2
## [1] 3
## [1] 4
## [1] 5
## [1] 6
## [1] 7
## [1] 8
## [1] 9
## [1] 10
```

Loop Control Statements

#break statment has already been used in the while and repeat loop

```
#next loop control statement
color<-list("black","blue","yellow","red","orange","hotpink")
for(i in color)
{
```

```
if(i=="k")
{
    next
}
print(color)
}
```

```
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
## [1] "red"
##
## [[5]]
## [1] "orange"
##
## [[6]]
## [1] "hotpink"
##
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
## [1] "red"
##
## [[5]]
## [1] "orange"
##
## [[6]]
## [1] "hotpink"
##
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
```

```
## [1] "red"
##
## [[5]]
## [1] "orange"
##
## [[6]]
## [1] "hotpink"
##
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
## [1] "red"
##
## [[5]]
## [1] "orange"
##
## [[6]]
## [1] "hotpink"
##
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
## [1] "red"
##
## [[5]]
## [1] "orange"
##
## [[6]]
## [1] "hotpink"
##
## [[1]]
## [1] "black"
##
## [[2]]
## [1] "blue"
##
## [[3]]
## [1] "yellow"
##
## [[4]]
```

```
## [1] "red"  
##  
## [[5]]  
## [1] "orange"  
##  
## [[6]]  
## [1] "hotpink"
```