In [1]:
```
print("helo")
```

```
[1] "helo"
```

In [2]:
```
print(23.9+11)
```

```
[1] 34.9
```

In [3]:
```
mean(1:5)
```

```
3
```

In [5]:
```
help("mean")
```

In [10]:
```
apple <- c('red','blue','orange')
```

In [7]:
```
apple
```

```
'red'  'blue'  'orange'
```

In [8]:
```
print(class(apple))
```

```
[1] "character"
```

In [12]:
```
list1 <- list(c(2,5,3),21.3,sin)
```

In [13]:
```
list1
```

```
1. 2  5  3
2. 21.3
3. .Primitive("sin")
```

In [14]:
```
M = matrix(c('a','b','b','c','b','a'),nrow=2,ncol=3,byrow=TRUE)
```

In [15]:
```
M
```

```
a  b  b
c  b  a
```

In [16]:
```
a <- array(c('green','yellow'),dim=c(2,3,3))
```

In [18]:
```
print(a)
```

```
, , 1

     [,1]     [,2]     [,3]
[1,] "green"  "green"  "green"
[2,] "yellow" "yellow" "yellow"

, , 2

     [,1]     [,2]     [,3]
[1,] "green"  "green"  "green"
[2,] "yellow" "yellow" "yellow"

, , 3

     [,1]     [,2]     [,3]
[1,] "green"  "green"  "green"
[2,] "yellow" "yellow" "yellow"
```

In [19]:
```
apple_colors <- c('green','green','yellow','red','red','red')
```

In [20]:
```
apple_colors
```

```
'green'  'green'  'yellow'  'red'  'red'  'red'
```

In [21]:
```
factor_apple <- factor(apple_colors)
```

In [22]:
```
factor_apple
```

```
green  green  yellow  red  red  red

▶ Levels:
```

In [23]:
```
v<- c(2,5.5,6)
t<-c(8,3,4)
print(v+t)
print(v-t)
print(v*t)
```

```
[1] 10.0  8.5 10.0
[1] -6.0  2.5  2.0
[1] 16.0 16.5 24.0
```

In [28]:
```
v <- readline()
v <- strsplit(v," ")
```

```
3 2 4 5 1
```

In [29]:
```
v
```

```
1. '3'  '2'  '4'  '5'  '1'
```

In [30]:
```
class(v)
```

```
'list'
```

In [32]:
```
v <- c(v)
```

In [33]:
```
v
```

```
1. '3'  '2'  '4'  '5'  '1'
```

In [34]:
```
class(v)
```

```
'list'
```

In [35]:
```
class(c(v))
```

```
'list'
```

In [38]:
```
x <- readline()
x <- as.integer(v[[1]])
```

```
2 3 4 1
```

In [39]:
```
x
```

```
3  2  4  5  1
```

In [40]:
```
class(v)
```

```
'list'
```

In [41]:
```
class(x)
```

```
'integer'
```

In [49]:
```
for(i in 1:length(x)){
    print(x[i])
}
```

```
[1] 3
[1] 2
[1] 4
[1] 5
[1] 1
```

Type *Markdown* and LaTeX: α^2