Descriptive Statistics With R Software

Calculations with R Software

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Basics and R as a Calculator

Shalabh

Department of Mathematics and Statistics

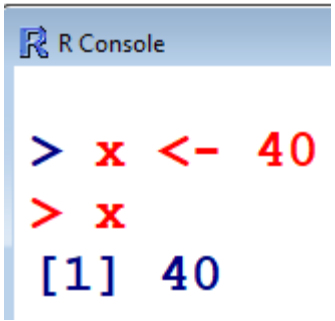
Indian Institute of Technology Kanpur

Basics

- `>` is the prompt sign in R.

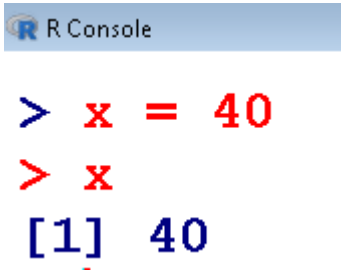
- The assignment operators are the left arrow with dash `<-` and equal sign `=`.

  `> x <- 40` assigns the value 40 to `x`.



  `> x = 40` assigns the value 40 to `x`.

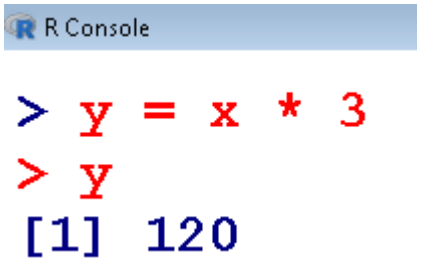
  Initially only `<-` was available in R.



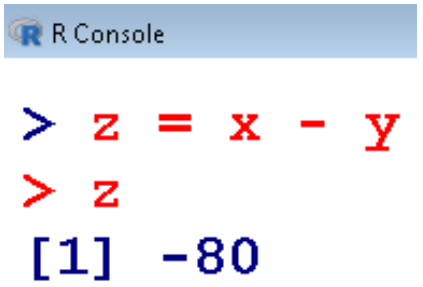
Basics

`> x = 40` assigns the value 40 to `x`.

`> y = x * 3` assigns the value `3*x` to `y`.



`> z = x - y` assigns the value `x - y` to `z`.



Basics

- **# : The character # marks the beginning of a comment.**

All characters until the end of the line are ignored.

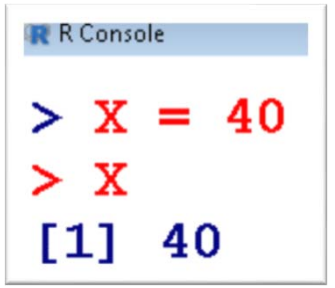
```
> # mu
```
is the mean

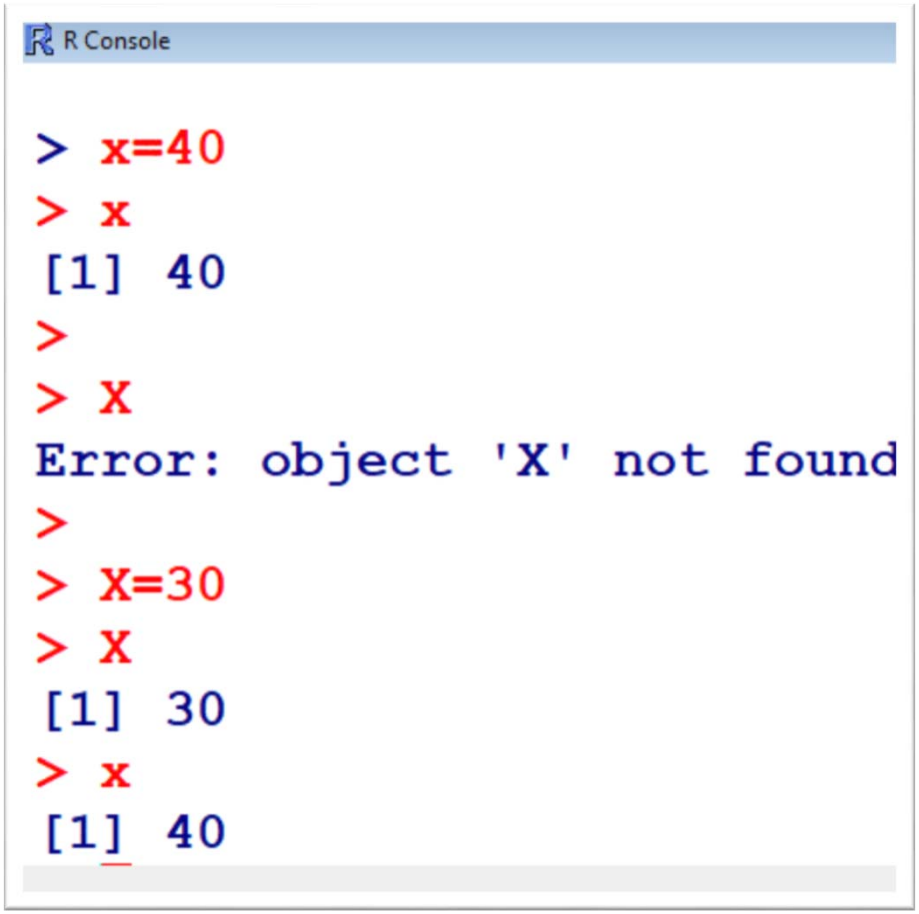
```
> # x = 40
```
is treated as comment only

Basics

- **Capital and small letters are different.**

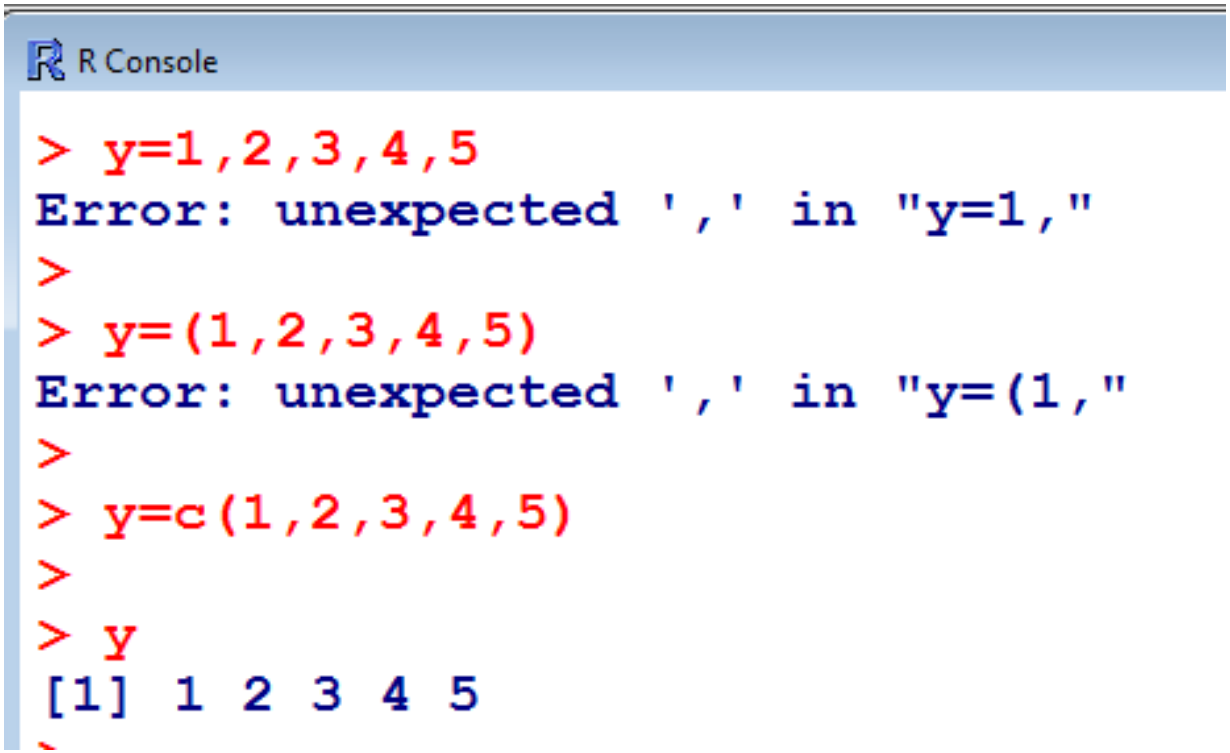
  `> X = 40` and `> x = 40` are different





Basics

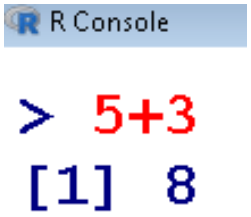
- The command `c(1,2,3,4,5)` combines the numbers 1,2,3,4 and 5 to a vector.



R as a calculator

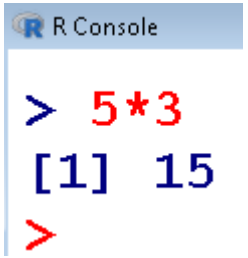
Addition

```
> 5+3          # Command
[1] 8          # Output
```



Multiplication

```
> 5*3          # Command
[1] 15          # Output
```



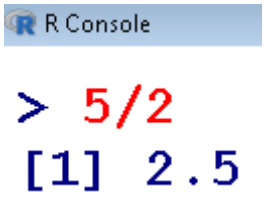
R as a calculator

Subtraction

```
> 5-3          # Command
[1] 2          # Output
```

Division

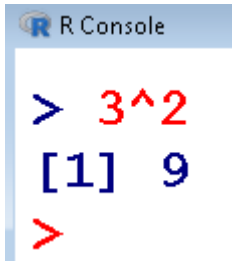
```
> 5/2          # Command
[1] 2.5        # Output
```



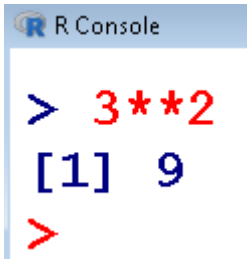
R as a calculator

Power

```
> 3^2          # Command
[1] 9          # Output
```




```
> 3**2         # Command
[1] 9          # Output
```

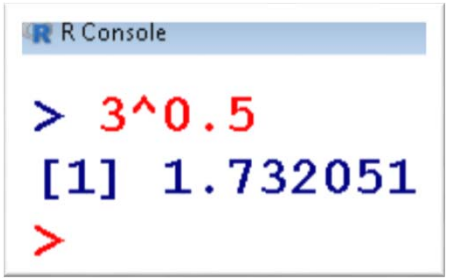


$$3^2$$

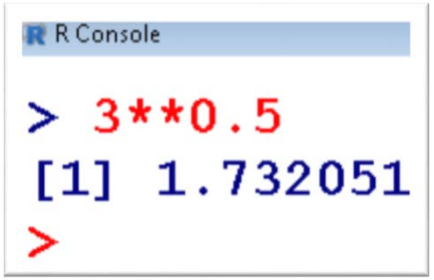
R as a calculator

Power

```
> 3^0.5          # Command
[1] 1.732051     # Output
```




```
> 3**0.5         # Command
[1] 1.732051     # Output
```

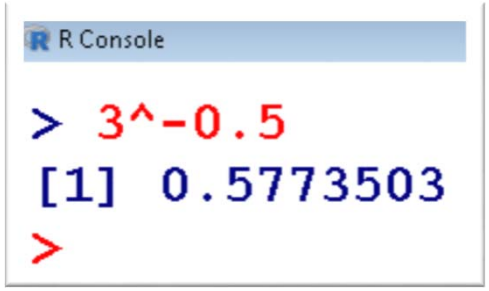


$$3^{1/2}$$

R as a calculator

Power

```
> 3^-0.5        # Command
[1] 0.5773503 # Output
```



$$3^{-1/2}$$

R as a calculator

Multiple operators (BODMAS)

```
> 6+5-4*3+2/4   # Command
[1] -0.5        # Output
```