

MOOC Course - Introduction to R Software

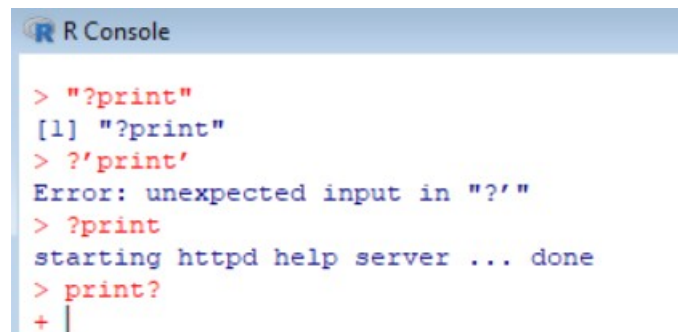
July 2021

Assignment 1

1. Which of the following command is used to get help on the `print` function?

- a. `"?print"`
- b. `?'print'`
- c. `?print`
- d. `print?`

Solution:

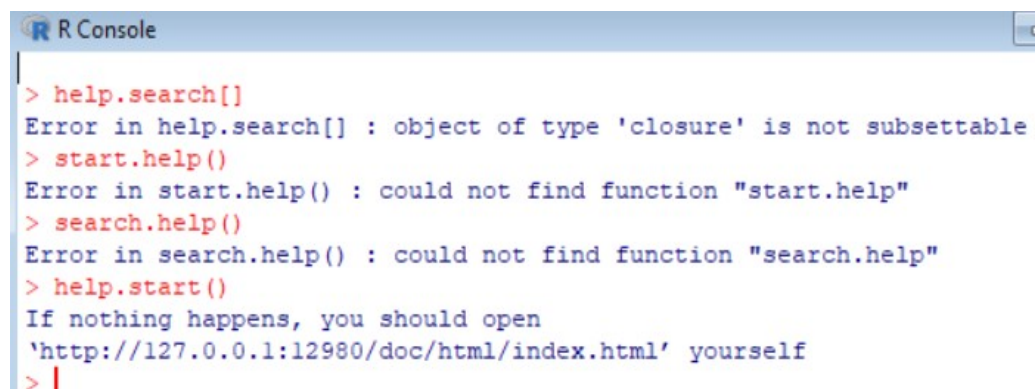


```
R Console
> "?print"
[1] "?print"
> ?'print'
Error: unexpected input in "?"
> ?print
starting httpd help server ... done
> print?
+ |
```

2. Which of the following is the correct option to provide help in R?

- a. `help.search[]`
- b. `start.help()`
- c. `search.help()`
- d. `help.start()`

Solution:

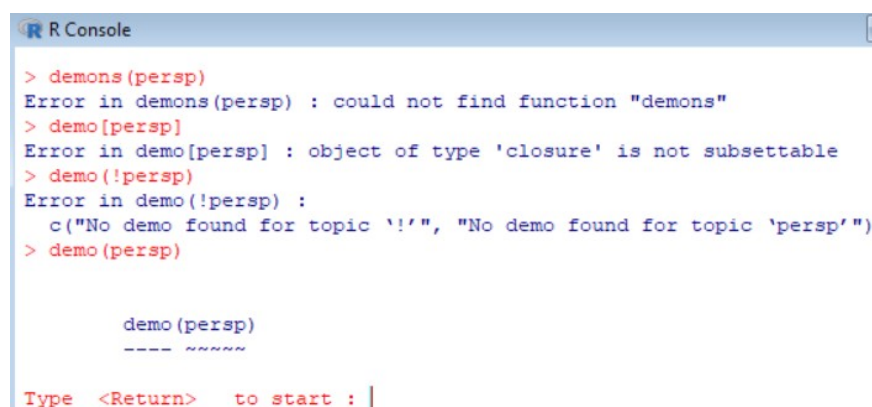


```
R Console
> help.search[]
Error in help.search[] : object of type 'closure' is not subsettable
> start.help()
Error in start.help() : could not find function "start.help"
> search.help()
Error in search.help() : could not find function "search.help"
> help.start()
If nothing happens, you should open
'http://127.0.0.1:12980/doc/html/index.html' yourself
> |
```

3. Which of the following function provides the demonstration of the package **persp** in R?

- a. **demons(persp)**
- b. **demo[ersp]**
- c. **demo(persp)**
- d. **demo(!ersp)**

Solution:



```
R Console
> demons(persp)
Error in demons(persp) : could not find function "demons"
> demo[ersp]
Error in demo[ersp] : object of type 'closure' is not subsettable
> demo(!ersp)
Error in demo(!ersp) :
  c("No demo found for topic '!', "No demo found for topic 'ersp'")
> demo(persp)

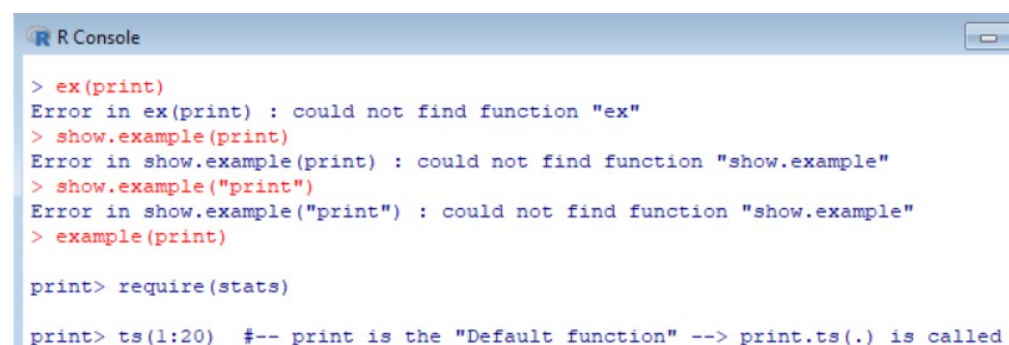
      demo(persp)
      ---- ~~~~~

Type <Return> to start : |
```

4. Which of the function provides an example on the function **print**

- a. **example(print)**
- b. **ex(print)**
- c. **show.example(print)**
- d. **show.example("print")**

Solution:



```
R Console
> ex(print)
Error in ex(print) : could not find function "ex"
> show.example(print)
Error in show.example(print) : could not find function "show.example"
> show.example("print")
Error in show.example("print") : could not find function "show.example"
> example(print)

print> require(stats)

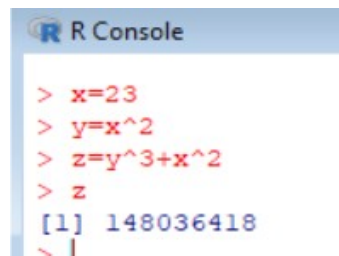
print> ts(1:20) #-- print is the "Default function" --> print.ts(.) is called
```

5. What will be the outcome of following commands when executed over the R console

```
x=23
y=x^2
z=y^3+x^2
z
```

- a. 12696
- b. 280370
- c. 148036418
- d. 148048056

Solution:



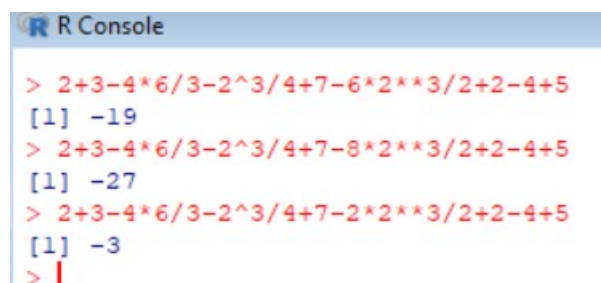
```
R Console
> x=23
> y=x^2
> z=y^3+x^2
> z
[1] 148036418
> |
```

6. If the correct outcome of the following command is -19 then what should be the number in place of ?

$2+3-4*6/3-2^3/4+7-?*2**3/2+2-4+5$

- a. 8
- b. 6
- c. 2
- d. None of these

Solution:



```
R Console
> 2+3-4*6/3-2^3/4+7-6*2**3/2+2-4+5
[1] -19
> 2+3-4*6/3-2^3/4+7-8*2**3/2+2-4+5
[1] -27
> 2+3-4*6/3-2^3/4+7-2*2**3/2+2-4+5
[1] -3
> |
```

7. Which one of the following is the correct outcome of the command

$-478/365-12^3/47-6**2**3-27^{-(1/3)}-7^6*3$?

- a. -2032601
- b. -1326707
- c. 352860.6
- d. None of these

Solution:

```
R Console
> -478/365-12^3/47-6**2**3-27^-(1/3)-7^6*3
[1] -2032601
> |
```

8. If the correct outcome of the following command is $-1 \quad 1 \quad -1 \quad -1$ then what should be the number in place of ?

$c(1,2,3,4)*c(1,?,2,4)^c(2,1,3,2)**c(1,2,3,3) -$
 $c(2,3,402653185,262145)$?

- a. 0
- b. 2
- c. 3
- d. None of these

Solution:

```
R Console
> c(1,2,3,4)*c(1,0,2,4)^c(2,1,3,2)**c(1,2,3,3) - c(2,3,402653185,262145)
[1] -1 -3 -1 -1
> c(1,2,3,4)*c(1,3,2,4)^c(2,1,3,2)**c(1,2,3,3) - c(2,3,402653185,262145)
[1] -1 3 -1 -1
> c(1,2,3,4)*c(1,2,2,4)^c(2,1,3,2)**c(1,2,3,3) - c(2,3,402653185,262145)
[1] -1 1 -1 -1
> |
```

9. Which one of the following is the correct outcome of the command
 $c(2,3,4,5)^{c(2,3)} + c(12,23,14,25)^{c(3,2)} - c(5,6,7,8) * c(2,3)$?

- a. 1722 538 2746 726
- b. 1742 574 2774 774
- c. -1734 -520 -2742 -524
- d. None of these

Solution:

```
R Console
> c(2,3,4,5)^c(2,3) + c(12,23,14,25)^c(3,2) - c(5,6,7,8)*c(2,3)
[1] 1722 538 2746 726
> |
```

10. Which one of the following commands will give a result with a warning?

- a. $c(2,3,4,5)^{c(2,3)} - c(12,23,14,15)^{c(2,3,4,5)} + c(2340,3440,48760,539870)$
- b. $c(2,3,4,5)^{c(2,3,4)} - c(12,23,14,15)^{c(2,3,4,5)} + c(2340,3440,48760,539870) + c(2,3,4,5)^{c(2,3,4,5)}$
- c. $c(2,3,4,5)^{c(2,3,8,9)} - c(12,23,14,15)^{c(2,3,4,5)} + c(2340,3440,48760,539870)$
- d. None of these

Solution:

```
R Console
> c(2,3,4,5)^c(2,3) - c(12,23,14,15)^c(2,3,4,5) + c(2340,3440,48760,539870)
[1] 2200 -8700 10360 -219380
> c(2,3,4,5)^c(2,3,4) - c(12,23,14,15)^c(2,3,4,5) + c(2340,3440,48760,539870) + c(2,3,4,5)^c(2,3,4,5)
[1] 2204 -8673 10856 -216355
Warning message:
In c(2, 3, 4, 5)^c(2, 3, 4) :
longer object length is not a multiple of shorter object length
> c(2,3,4,5)^c(2,3,8,9) - c(12,23,14,15)^c(2,3,4,5) + c(2340,3440,48760,539870)
[1] 2200 -8700 75880 1733620
> |
```

11. If the correct outcome of the following command is 4.00 30.25 11.00 72.00 then what should be the number in place of ?

`abs(c(5,6,7,8)*c(-1,-2,-3,-4) - c(5,6,7,8)*c(-2,?) - c(1,2,4,4)^-c(1,2,-1,-2)) ?`

- a. 3
- b. -3
- c. 2
- d. None of these

Solution:

```
R Console
> abs(c(5,6,7,8)*c(-1,-2,-3,-4) - c(5,6,7,8)*c(-2,3) - c(1,2,4,4)^-c(1,2,-1,-2))
[1] 4.00 30.25 11.00 72.00
> abs(c(5,6,7,8)*c(-1,-2,-3,-4) - c(5,6,7,8)*c(-2,-3) - c(1,2,4,4)^-c(1,2,-1,-2))
[1] 4.00 5.75 11.00 24.00
> abs(c(5,6,7,8)*c(-1,-2,-3,-4) - c(5,6,7,8)*c(-2,2) - c(1,2,4,4)^-c(1,2,-1,-2))
[1] 4.00 24.25 11.00 64.00
> |
```

12. If the correct outcome of the following command is 1.0000 0.0625 16.0000 256.0000 then what should be the number in place of ?

`c(1,2,4,4)^-c(1,2,-1,-2)* c(1,2,?,4)^-c(1,2,-1,-2) ?`

- a. 3
- b. 4
- c. 5
- d. None of these

```
R Console
> c(1,2,4,4)^-c(1,2,-1,-2)* c(1,2,4,4)^-c(1,2,-1,-2)
[1] 1.0000 0.0625 16.0000 256.0000
> c(1,2,4,4)^-c(1,2,-1,-2)* c(1,2,3,4)^-c(1,2,-1,-2)
[1] 1.0000 0.0625 12.0000 256.0000
> c(1,2,4,4)^-c(1,2,-1,-2)* c(1,2,5,4)^-c(1,2,-1,-2)
[1] 1.0000 0.0625 20.0000 256.0000
~ |
```

Solution:

13. Which one of the following is the correct outcome of the command

`c(15,16,17,18)%/%8* c(52,64,71,86)%/%c(4,3)+ c(53,66,87,78)%%7 ?`

- a. -8 -16 -12 -25
- b. 9 39 31 55
- c. 17 45 37 57
- d. None of these

Solution:

```
R Console
> c(15,16,17,18)%/%8* c(52,64,71,86)%/%c(4,3)+ c(53,66,87,78)%%7
[1] 17 45 37 57
> |
```

14. Which one of the following is the correct outcome of the command

`max(c(62,83,44,75)^-c(9,-3))/ min(c(52,62,71,85)^c(2,3)) -
prod(c(1,2,1,2)^c(1,2)) + max(c(12,13,14,15)^c(2,3)) ?`

- a. 3147.54
- b. 3359
- c. 3570.46
- d. None of these

Solution:

```
R Console
> max(c(62,83,44,75)^-c(9,-3))/ min(c(52,62,71,85)^c(2,3)) -
+ )- prod(c(1,2,1,2)^c(1,2)) + max(c(12,13,14,15)^c(2,3))
[1] 3570.46
> |
```

15. Which one of the following is the correct outcome of the command

`prod(c(1,2,1,2)^c(1,2)) + sum(c(1,2,1,2)^c(2,3)) -
prod(c(1,2,1,2)^c(1,2,3,7)) - ceiling(c(5,6,7,8)^c(2,3))?`

- a. -453 -262 -429 34
- b. -503 -694 -527 -990
- c. -505 -696 -529 -992
- d. None of these

Solution:

```
R Console
> prod(c(1,2,1,2)^c(1,2)) + sum(c(1,2,1,2)^c(2,3)) -
+ prod(c(1,2,1,2)^c(1,2,3,7)) - ceiling(c(5,6,7,8)^c(2,3))
[1] -503 -694 -527 -990
> |
```

16. Which one of the following is the correct outcome of the command
`ceiling(c(5,6,7,8)^c(2,3)) + floor(c(5,6,7,8)^c(2,3)) +
floor(c(2,3,4,5)^-c(1,-2)) - round(c(5,6,7,8)^c(2,3))?`

- a. 25 207 49 487
- b. 25 225 49 537
- c. 75 657 147 1561
- d. None of these

Solution:

```
R Console
> ceiling(c(5,6,7,8)^c(2,3)) + floor(c(5,6,7,8)^c(2,3)) +
+ floor(c(2,3,4,5)^-c(1,-2)) - round(c(5,6,7,8)^c(2,3))
[1] 25 225 49 537
> |
```

17. Which one of the following is the correct outcome of the command

`round(c(21,23,44,15)^c(-11,-12) +
sqrt(c(35,16,37,88)^c(12,3))*sqrt(c(21,13,14,45)^-c(1,-2)))?`

- a. 401142446 832 685719226 37148
- b. 1838265625 51 2565726409 781
- c. -401142446 -832 -685719226 -37148
- d. None of these

Solution:

```
R Console
> round(c(21,23,44,15)^c(-11,-12) + sqrt(c(35,16,37,88)^c(12,3))
+ )*sqrt(c(21,13,14,45)^-c(1,-2)))
[1] 401142446 832 685719226 37148
> |
```


18. Which one of the following is the correct outcome of the command

`round(sum(c(12,13,871,789)) - prod(c(21,22,13,14,51))) ?`

- a. 4289969
- b. -82399
- c. -4286599
- d. None of these

```
R Console
> round(sum(c(12,13,871,789)) - prod(c(21,22,13,14,51)))
[1] -4286599
> |
```

Solution:

19. Which one of the following is the value of `x2` when the following commands are executed over the R console?

`x1 <- c(123,258,318,624)`

`x2 <- sqrt(x1^3)+x1/x1^2-x1**(1/2)`

- a. 1353.054 4128.035 5652.923 15562.537
- b. 1302.644 4015.098 5511.755 15275.517
- c. 1302.628 4015.090 5511.749 15275.513
- d. None of these

Solution:

```
R Console
> x1 <- c(123,258,318,624)
> x2 <- sqrt(x1^3)+x1/x1^2-x1**(1/2)
> x2
[1] 1353.054 4128.035 5652.923 15562.537
> |
```

20. Which one of the following is the correct outcome of the command

```
c(11,12,34,24)^-c(2,2,-1,-2)* c(1,2,3,4)- c(12,14,11,16)
%/%c(4,3)+ min(c(120,14,14,15)^c(1,3))+
max(c(56,12,71,15)^c(2,3)) ?
```

- a. -5029.992 -5030.986 -4927.000 -2728.000
- b. 5058.008 5059.014 5159.000 7364.000
- c. 5052.008 5051.014 5155.000 7354.000
- d. None of these

Solution:

```
R Console
> c(11,12,34,24)^-c(2,2,-1,-2)* c(1,2,3,4)- c(12,14,11,16) %/%
+ c(4,3)+ min(c(120,14,14,15)^c(1,3))+ max(c(56,12,71,15)^c(2,3))
[1] 5052.008 5051.014 5155.000 7354.000
> |
```

MOOC Course - Introduction to R Software
Answers of Assignment 1

1. c
2. d
3. c
4. a
5. c
6. b
7. a
8. b
9. a
10. b
11. a
12. b
13. c
14. c
15. b

16. b

17. a

18. c

19. a

20. c