In-class Exercise 9 Results for Simran Mander

Score for this attempt: **3.27** out of 10
Submitted Nov 6 at 11:29pm
This attempt took 1,908 minutes.

Question 1

0 / 1 pts

We create the vector below.

```
v <- c(1, "2", "3", 4, 5, "6")
```

Which of the following options will return `5`?

- v[2] + v[3]
- v[1] + v[4]
- **You Answered** v[5]
- all of the above
- **Correct Answer** none of the above

"2" is a text. As "a" + 3 would not give you an error, "2" +3 will give you an error as well.

Question 2

0.6 / 1 pts

Assume that you just opened a new R session. If you execute the following codes one by one (from the top to the bottom), which ones of these would successfully create a vector?

There is at least one option which will create a vector successfully, but there might be multiple. If so, you must select all of the ones.

Correct! ☑ `v1<-c(1,2,3)`

Correct! ☑ `v2<-c("a","b","c")`

Correct! ☑ `v3<-c(max(v1),min(v1))`

orrect Answer ☐ `v4<-c(1,TRUE)`

☐ `v5<-c(a)`

orrect Answer ☐ `v6<-c(1,"2")`

Question 3

1 / 1 pts

Let v be some numeric vector already defined in your new R session. No other R object has been defined yet.

Complete the following R code by filling each blank with a function name so that the R code can output a result when executed properly.

min `(v) + max(v) ==` sum `(range(v))`

Answer 1:

Correct! min

Answer 2:

Correct! sum

Question 4

0 / 1 pts

Suppose `v` is a vector whose elements are number (of type double).

Using the list of basic functions from the lecture notes, fill in each blank with a function name so that the completed R code below results in `TRUE` when executed successfully.

```
length(v) * min (v) == max (v)
```

Answer 1:

You Answered: min

Correct Answer: mean

Answer 2:

You Answered: max

Correct Answer: sum

Question 5

0 / 1 pts

Which one of the following options is not correct? (`a`, `b`, and `c` are logical single valued (atomic) variables.)

- `a & !a` is always `FALSE`
- `a | !a` is always `TRUE`
- You Answered: `!(a & b)` is always equal to `!a | !b`
- Correct Answer: `!(a | b)` is always equal to `!a | !b`
- `!a | b` is always equal to `b | !a`

Question 6

0 / 1 pts

Copy the following code into R. Questions 6-9 will be based on this vector.

```
set.seed(11)

rand_vec<-runif(100,min=0,max=100)
```

You should have a vector of 100 random numbers starting with 27.72497942, 0.05183129, 51.06083730, ...

What is the standard deviation of `rand_vec`? (provide the result by rounding the standard deviation to its 3 decimal place)

Hint: Use `sd()` and `round( ,3)` functions.

You Answered: 28.877

Correct Answers: 25.663

Question 7

0.67 / 1 pts

We can use the `which()` function to extract the locations of the elements that satisfy the conditions specified in the `which()` function (i.e., locations resulting in `TRUE`).

For example, let `v <- c(1,2,2,3,4,5,2)`.Then `which(v == 2)` will output the vector containing 2,3,7

Fill in each blank with an appropriate function name to find the number of elements of `rand_vec`, which are greater than `75`.

length `(which(rand_vec` > `75))`

What is the result? That is, how many elements are greater than 75?

24

Answer 1:

Correct! length

Answer 2:

Correct! >

Answer 3:

You Answered 24

Correct Answer 16

Question 8

0 / 1 pts

Remember `v[i]` will allow to access the i-th element of vector `v`.

Create a new vector by sorting `rand_vec` in **descending** order, then return the **55th** element of the **new (sorted)** vector by rounding the value to its **3** decimal place.

Hint: Use `sort( )`, but make sure that you check out its syntax. For rounding again, use `round( ,3)`.

You Answered 53.860

Correct Answers 36.379

```
set.seed(11)

rand_vec <- runif(100,min=0,max=100)

sorted_rand_vec <- sort(rand_vec, decreasing = TRUE)
# decreasing = TRUE allows you to sort in descending order

round(sorted_rand_vec[55],3)
```

Question 9

0 / 1 pts

Create a subset of `rand_vec` with its values greater than `25` (make sure that you use the original version of `rand_vec` as created in question 6 without changing the initial order).

What is the **25th** element of this **new** vector by rounding it to it 3 decimal place)

Hint: Suppose `v` be some vector with length greater than 10. Then `v[c(3,7,9)]` will return the 3rd, 7th, 9th elements of `v`.

You Answered

28.261

Correct Answers

27.687

```
subset_rand_vec <- rand_vec[which(rand_vec>25)]

round(subset_rand_vec[25],3)
```

Question 10

1 / 1 pts

Let's start with creating the following vector.

```
my_vector <- c(1,2,3,4,5,6,7,8,9,10)
```

After creating the vector, if you execute the following code successfully in R, the output given is `4`.

```
[ sum ](my_vector > 4 [ & ] my_vector <
[ 9 ])
```

Please complete the formula. You can only use a number, a function name, or a logical operator in each blank.

Answer 1:

Correct!

sum

Answer 2:

Correct!

&

orrect Answer

>

Answer 3:

Correct!

9

my_vector > 4 gives you a vector of 10 logical values.

my_vector < 9 gives you a vector of 10 logical values.

my_vector > 4 & my_vector < 9 will result in a vector of 10 logical values who are TRUE when both conditions are satisfied.

When you use sum over a logical vector, R will treat TRUE as 1 and FALSE as 0. This also applies to other arithmetic operations

Quiz Score: **3.27** out of 10