# Week 2 Quiz

**9/10 points (90%)**

Quiz, 10 questions

## ✔ Congratulations! You passed!

Next Item

✔ 1 / 1 points

1.
Suppose I define the following function in R

```
cube <- function(x, n) {
        x^3
}
```

What is the result of running

```
cube(3)
```

in R after defining this function?

- A warning is given with no value returned.
- An error is returned because 'n' is not specified in the call to 'cube'
- The users is prompted to specify the value of 'n'.
- ◉ The number 27 is returned

**Correct**
Because 'n' is not evaluated, it is not needed even though it is a formal argument.

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✔ 1 / 1 points

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2.

The following code will produce a warning in R.

```
x <- 1:10
if(x > 5) {
        x <- 0
}
```

Why?

- The syntax of this R expression is incorrect.
- The expression uses curly braces.
- You cannot set 'x' to be 0 because 'x' is a vector and 0 is a scalar.
- 'x' is a vector of length 10 and 'if' can only test a single logical statement.

**Correct**

- There are no elements in 'x' that are greater than 5

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1 / 1 points

3.

Consider the following function

```
f <- function(x) {
        g <- function(y) {
                y + z
        }
        z <- 4
        x + g(x)
}
```

If I then run in R

```
z <- 10
f(3)
```

What value is returned?

- 10

**Correct**

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- 7
- 16
- 4

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1 / 1 points

4.

Consider the following expression:

```
x <- 5
y <- if(x < 3) {
        NA
} else {
        10
}
```

What is the value of 'y' after evaluating this expression?

- NA
- 3
- 10

**Correct**

- 5

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1 / 1 points

5.

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Consider the following R function

```
h <- function(x, y = NULL, d = 3L) {
        z <- cbind(x, d)
        if(!is.null(y))
                z <- z + y
        else
                z <- z + f
        g <- x + y / z
        if(d == 3L)
                return(g)
        g <- g + 10
        g
}
```

Which symbol in the above function is a free variable?

- [x] f

**Correct**

- [ ] z
- [ ] d
- [ ] L
- [ ] g

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✔ 1 / 1 points

6.

What is an environment in R?

- [ ] a special type of function
- [ ] a list whose elements are all functions
- [ ] an R package that only contains data
- [x] a collection of symbol/value pairs

**Correct**

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1 / 1 points

7.

The R language uses what type of scoping rule for resolving free variables?

- global scoping
- lexical scoping

**Correct**

- dynamic scoping
- compilation scoping

---

0 / 1 points

8.

How are free variables in R functions resolved?

- The values of free variables are searched for in the environment in which the function was called

**This should not be selected**

- The values of free variables are searched for in the environment in which the function was defined
- The values of free variables are searched for in the working directory
- The values of free variables are searched for in the global environment

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1 / 1 points

9.

What is one of the consequences of the scoping rules used in R?

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- R objects cannot be larger than 100 MB
- All objects can be stored on the disk
- Functions cannot be nested
- All objects must be stored in memory

**Correct**

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1 / 1 points

10.
In R, what is the parent frame?

- It is always the global environment
- It is the environment in which a function was called

**Correct**

- It is the environment in which a function was defined
- It is the package search list

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