Week 2 Quiz

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9/10 points earned (90%)

Quiz passed!

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?

- The users is prompted to specify the value of 'n'.
- An error is returned because 'n' is not specified in the call to 'cube'
- The number 27 is returned

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

- A warning is given with no value returned.

0 / 1 points

2.
The following code will produce a warning in R.

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

Why?

- There are no elements in 'x' that are greater than 5
- The syntax of this R expression is incorrect.

Incorrect Response

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

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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 Response

- 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?

- 3
- 10

Correct Response

- NA
- 5

1 / 1 points

5.
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?

- f

Correct Response

- z
- d
- L
- g

1 / 1 points

6.
What is an environment in R?

- a collection of symbol/value pairs

Correct Response

- a list whose elements are all functions
- an R package that only contains data
- a special type of function

1 / 1 points

7.
The R language uses what type of scoping rule for resolving free variables?

- compilation scoping
- lexical scoping

Correct Response

- global scoping
- dynamic scoping

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1 / 1 points

8.
How are free variables in R functions resolved?

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

Correct Response

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1 / 1 points

9.
What is one of the consequences of the scoping rules used in R?

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

Correct Response

---

1 / 1
points

10.
In R, what is the parent frame?

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

Correct Response

- It is the environment in which a function was defined