Feedback — Week 2 Quiz

Help

You submitted this quiz on **Mon 29 Dec 2014 1:22 AM PST**. You got a score of **9.00** out of **10.00**. However, you will not get credit for it, since it was submitted past the deadline.

Question 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?

Your Answer		Score	Explanation
○ A warning is given with no value returned.			
○ An error is returned because 'n' is not specified in the call to 'cube'			
◉ The number 27 is returned	✔	1.00	Because 'n' is not evaluated, it is not needed even though it is a formal argument.
○ The users is prompted to specify the value of 'n'.			
Total		1.00 / 1.00	

Question 2

The following code will produce a warning in R.

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

Why?

Your Answer		Score	Explanation
○ The expression uses curly braces.			
◉ 'x' is a vector of length 10 and 'if' can only test a single logical statement.	✔	1.00	
○ There are no elements in 'x' that are greater than 5			
○ The syntax of this R expression is incorrect.			
○ You cannot set 'x' to be 0 because 'x' is a vector and 0 is a scalar.			
Total		1.00 / 1.00	

Question 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?

Your Answer		Score	Explanation
4			
16			
10	✔	1.00	
7			
Total		1.00 / 1.00	

Question 4

Consider the following expression:

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

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

Your Answer		Score	Explanation
3			
NA			
5			
10	✔	1.00	
Total		1.00 / 1.00	

Question 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?

Your Answer		Score	Explanation
f	✔	1.00	
z			
d			
L			
g			
Total		1.00 / 1.00	

Question 6

What is an environment in R?

Your Answer	Score	Explanation
a list whose elements are all functions		

○ an R package that only contains data		
◉ a collection of symbol/value pairs	✔	1.00
○ a special type of function		
Total		1.00 / 1.00

Question 7

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

Your Answer		Score	Explanation
○ global scoping			
◉ lexical scoping	✔	1.00	
○ compilation scoping			
○ dynamic scoping			
Total		1.00 / 1.00	

Question 8

How are free variables in R functions resolved?

Your Answer		Score	Explanation
○ 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	✔	1.00	
○ The values of free variables are searched for in the global environment			

The values of free variables are searched for in the working directory			
Total		1.00 / 1.00	

Question 9

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

Your Answer		Score	Explanation
R objects cannot be larger than 100 MB			
All objects can be stored on the disk			
All objects must be stored in memory	✔	1.00	
Functions cannot be nested			
Total		1.00 / 1.00	

Question 10

In R, what is the parent frame?

Your Answer		Score	Explanation
It is the package search list			
It is the environment in which a function was called			
It is the environment in which a function was defined			
It is always the global environment	✖	0.00	
Total		0.00 / 1.00	