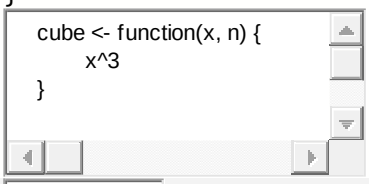
Coursera R Programming WEEK 2 Solutions

1.

Question 1

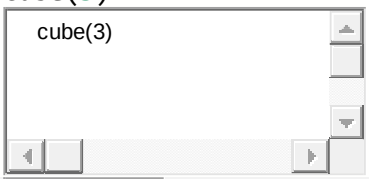
Suppose I define the following function in R

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



What is the result of running

```
cube(3)
```



in R after defining this function?

1 / 1 point

A warning is given with no value returned.

The users is prompted to specify the value of 'n'.

The number 27 is returned

An error is returned because 'n' is not specified in the call to 'cube'

Correct C

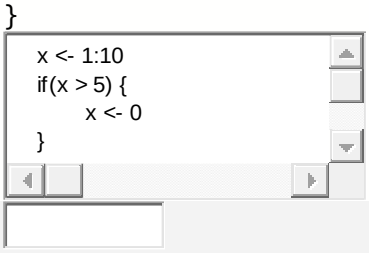
Because 'n' is not evaluated, it is not needed even though it is a formal argument.

2.

Question 2

The following code will produce a warning in R.

```
4
}
```



Why?

1 / 1 point

The expression uses curly braces.

The syntax of this R expression is incorrect.

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

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 E

3.

Question 3

Consider the following function

```
1
2
3
4
5
6
7
f <- function(x) {
        g <- function(y) {
                y + z
        }
        z <- 4
        x + g(x)
}
```

```
        }
        z <- 4
        x + g(x)
}
```

If I then run in R

```
f(3)
```

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

What value is returned?

1 / 1 point

7

16

10

4

Correct **C**

4.

Question 4

Consider the following expression:

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

}

```
        NA
} else {
        10
}
```

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

1 / 1 point

5

NA

10

3

Correct C

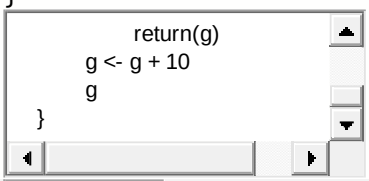
5.

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?

1 / 1 point

f

z

d

L

g

Correct A

6.

Question 6

What is an environment in R?

1 / 1 point

a special type of function

a collection of symbol/value pairs

a list whose elements are all functions

an R package that only contains data

Correct B

7.

Question 7

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

1 / 1 point

global scoping

lexical scoping

compilation scoping

dynamic scoping

Correct B

8.

Question 8

How are free variables in R functions resolved?

1 / 1 point

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 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 defined

Correct D

9.

Question 9

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

1 / 1 point

All objects can be stored on the disk

All objects must be stored in memory

Functions cannot be nested

R objects cannot be larger than 100 MB

Correct B

10.

Question 10

In R, what is the parent frame?

1 / 1 point

It is always the global environment

It is the environment in which a function was defined

It is the environment in which a function was called

It is the package search list

Correct C