**Topics: for loops**

What is displayed by the following code?

f = function(n){

for (x in 1:n){

cat(x \* x, " ")

}

cat("\n")

return(c(x, n))

}

# What does this display?

#result = f(4)

# What does this display?

#result

**Topics: while loops, cat vs return**

What is displayed by the following code?

f = function(n){

x = 1

while (n >= 1){

cat(x, " ")

x = x \* 2

n = n - 1

}

cat("\n")

return(c(x, n))

}

# What does this display?

#x = f(4)

# What does this display?

#x

**Topics: for loops, nested loops**

What is displayed by the following code?

f = function(n){

for (x in 1:n){

cat("\*\*\* starting outer for loop again\*\*\*\n")

for (y in x:n){

cat("x is ", x, " ")

cat("y is ", y, "\n")

}

}

return( c(x,y) )

}

#result = f(4)

#result

**Topics: for loops, nested loops, if**

What is displayed by the following code?

drawSomething = function(size){

if (!is.numeric(size) || trunc(size) != size || size < 0){

stop("size must be a non-negative whole number")

}

for (row in 1:size){

for (col in 1:size){

if (col == row || col == size - row + 1){

cat("@")

} else {

cat(".")

}

}

cat("\n")

}

cat("\nHope you like the picture! :)\n")

}

# What do these display?

#drawSomething(3)

#drawSomething(5)

#drawSomething(1)

#drawSomething(0) # be careful! This is tricky. Probably not what you'd expect.

**Topics: for loops, nested loops, if**

The only thing that changed are the lines that are highlighted in the code with “# THIS CHANGED”.  
What will be displayed now?

drawSomething = function(size){

if (!is.numeric(size) || trunc(size) != size || size < 0){

stop("size must be a non-negative whole number")

}

for (row in 1:size){

for (col in 1:size){

if (col == row || col == size - row + 1){ # THIS CHANGED

# THIS CHANGED

if ( row %% 2 == 0) # THIS CHANGED

cat("0") # THIS CHANGED

else # THIS CHANGED

cat("X") # THIS CHANGED

# THIS CHANGED

} else {

cat(".")

}

}

cat("\n")

}

cat("\nHope you like the picture! :)\n")

}

# What does this display?

#drawSomething(5)

**Topics: for loops, nested loops, if**

What is displayed by the following code?

drawSomething = function(size){

if (!is.numeric(size) || trunc(size) != size || size < 0){

stop("size must be a non-negative whole number")

}

for(row in 1:size){

if( row == 1 || row == size ){

for (x in 1:size){

cat("-")

}

cat("\n")

} else {

for (col in 1:size) {

if( row == 1 || row == size ){

for (x in 1:size){

cat("-")

}

cat("\n")

} else {

if (col == 1){

cat("|")

} else if (col == size){

cat("|\n")

} else if (row == col) {

cat("x")

} else {

cat(".")

}

}

}

}

}

}

# What does this display?

#drawSomething(5)