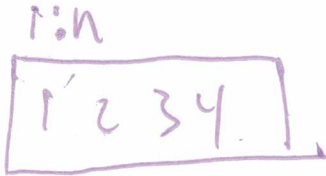
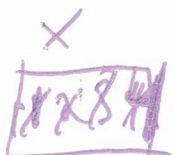
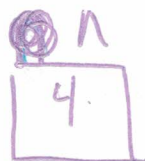


Topics: for loops

What is displayed by the following code?

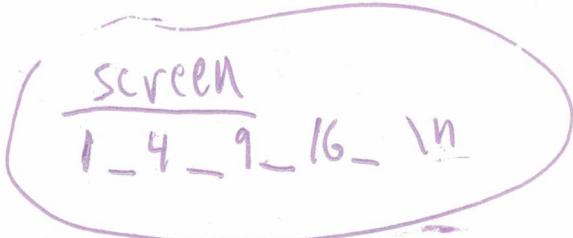
```
f = function(n){
  for (x in 1:n){
    cat(x * x, " ")
  }
  cat("\n")
  return(c(x, n))
}
```



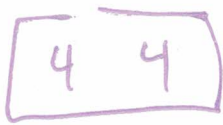
```
# What does this display?
#result = f(4)

# What does this display?
#result
```

Answer



Answer



```
f = function(h) {
  return(n * 2)
}
```

> f(3) + 100

[1] 106

> x = f(3)

> x

[1] 6

```
f = function(h) {
  cat(n * 2)
}
```

> f(3) + 100

6

Error: cant add 100 to NULL

> x = f(3)

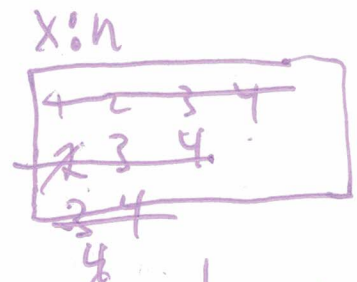
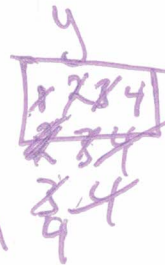
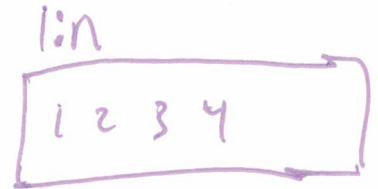
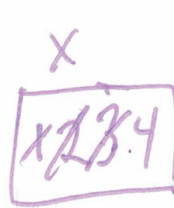
6

> x
NULL

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
```



Answer

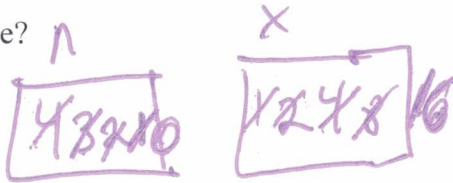
Screen

```
*** starting outer for loop again ***  
x is 1 y is 1  
x is 1 y is 2  
x is 1 y is 3  
x is 1 y is 4  
*** starting outer for loop again ***  
x is 2 y is 2  
x is 2 y is 3  
x is 2 y is 4  
*** starting outer for loop again ***  
x is 3 y is 3  
x is 3 y is 4  
*** starting outer for loop again ***  
x is 4 y is 4
```

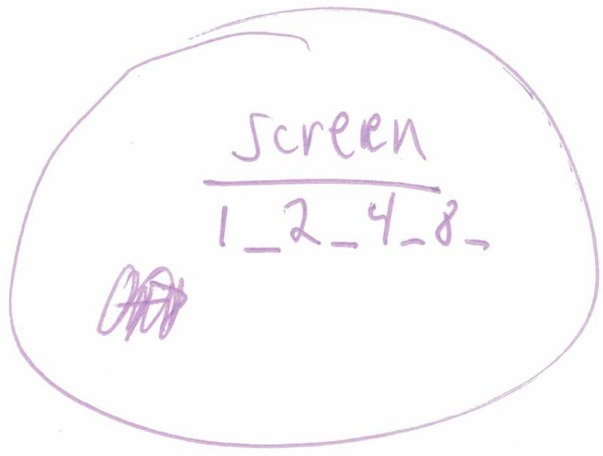
Topics: while loops, cat vs return

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)
```

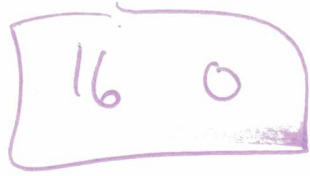


Answer →



What does this display?
x

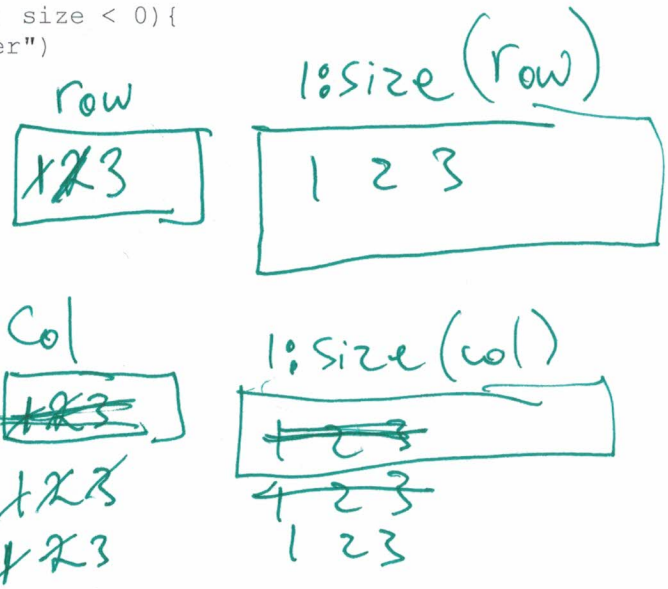
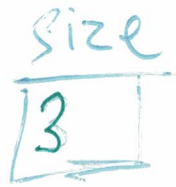
Answer →



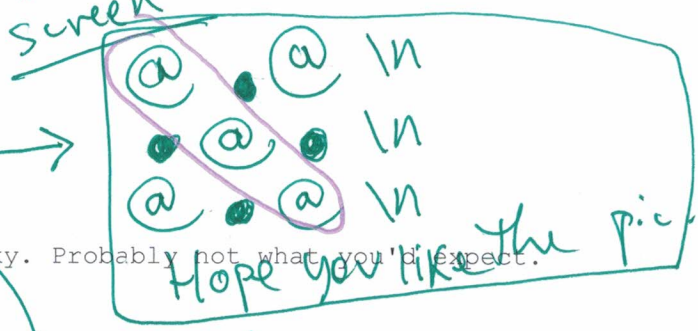
Topics: for loops, nested loops, if

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")
}
```

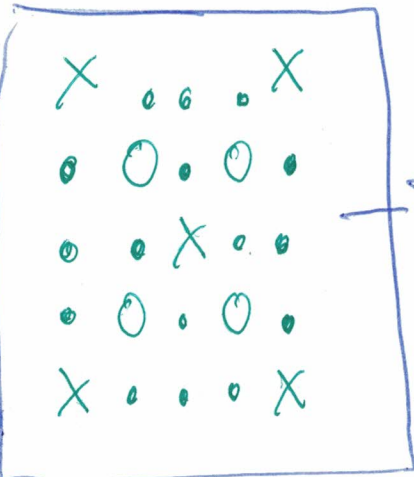


```
# What do these display?
#drawSomething(3)
#drawSomething(5)
#drawSomething(1)
#drawSomething(0) # be careful! This is tricky. Probably not what you'd expect.
```

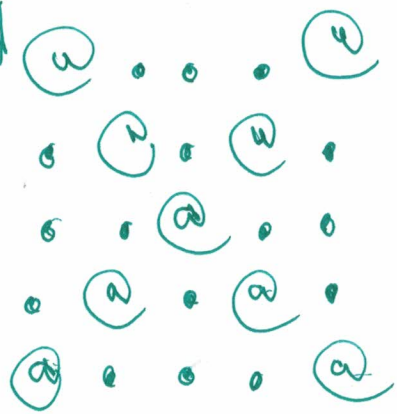


```
drawSomething(-3)
drawSomething("apple")
drawSomething(3.2)
```

ERROR: size must be ...



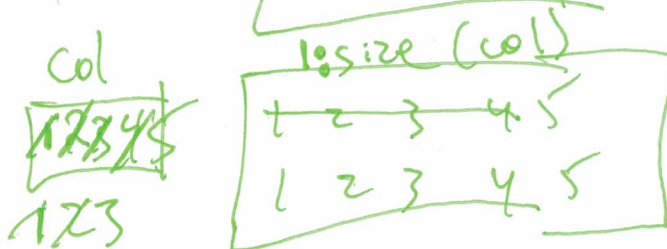
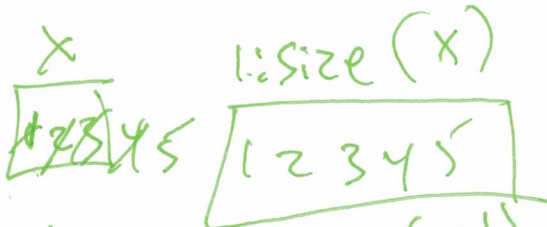
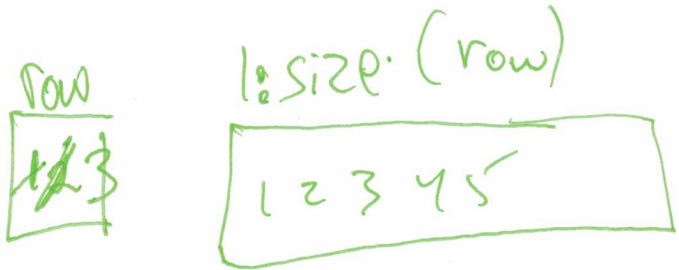
This is the answer for the next question (on the next pane)



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)