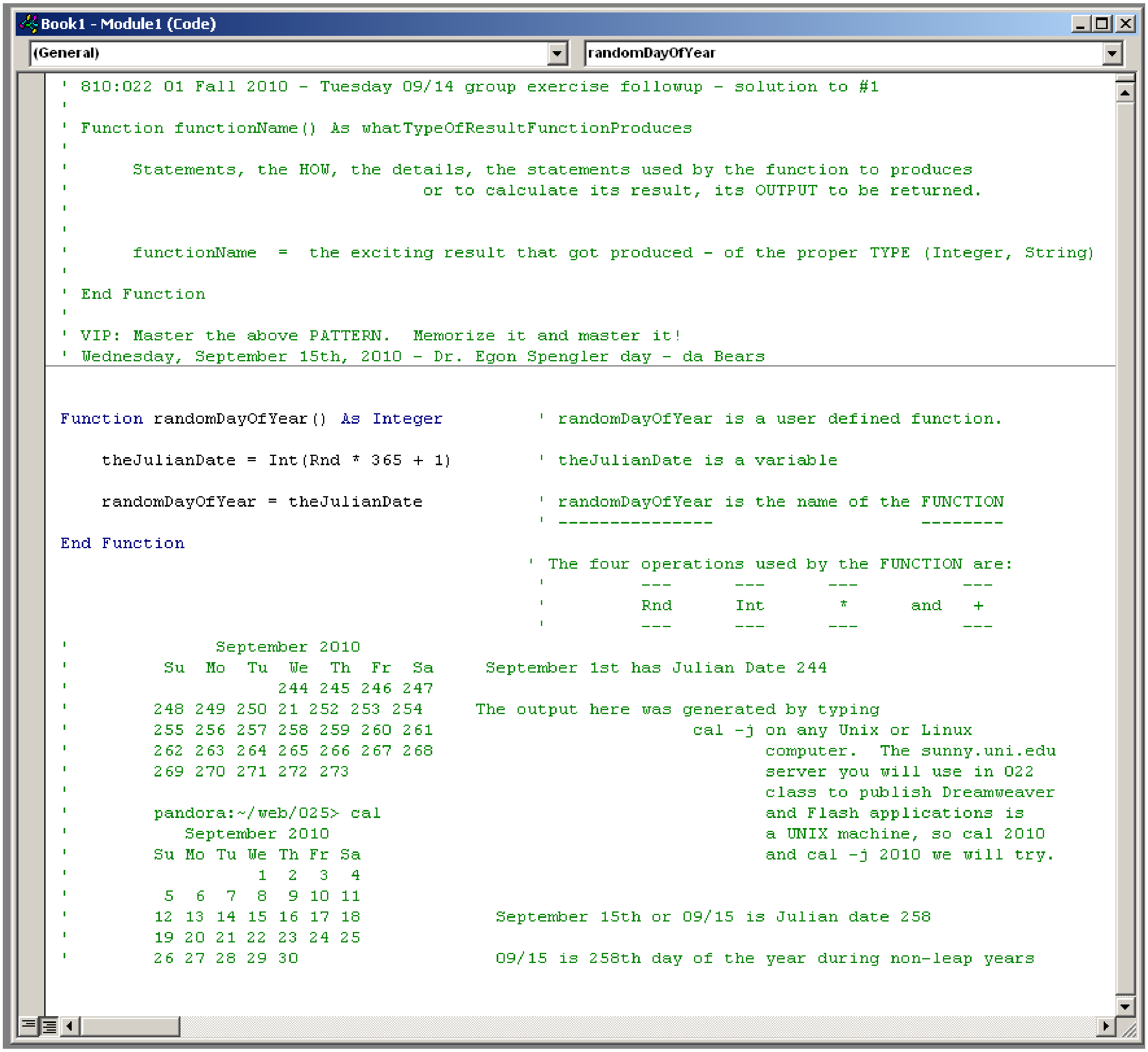
1. Write the Excel VBA function that will return integers between 1 and 365. Name your function **randomDayOfYear()**.



```
' 810:022 01 Fall 2010 - Tuesday 09/14 group exercise followup - solution to #1
'
' Function functionName() As whatTypeOfResultFunctionProduces
'
'      Statements, the HOW, the details, the statements used by the function to produces
'                                  or to calculate its result, its OUTPUT to be returned.
'
'
'      functionName  =  the exciting result that got produced - of the proper TYPE (Integer, String)
'
' End Function
'
' VIP: Master the above PATTERN.  Memorize it and master it!
' Wednesday, September 15th, 2010 - Dr. Egon Spengler day - da Bears


Function randomDayOfYear() As Integer         ' randomDayOfYear is a user defined function.

    theJulianDate = Int(Rnd * 365 + 1)        ' theJulianDate is a variable

    randomDayOfYear = theJulianDate           ' randomDayOfYear is the name of the FUNCTION
                                              ' ---------------                   --------
End Function
                                             ' The four operations used by the FUNCTION are:
                                              '         ---      ---      ---          ---
                                              '         Rnd      Int       *      and   +
                                              '         ---      ---      ---          ---
'              September 2010
'         Su  Mo  Tu  We  Th  Fr  Sa      September 1st has Julian Date 244
'                    244 245 246 247
'        248 249 250 21 252 253 254      The output here was generated by typing
'        255 256 257 258 259 260 261                          cal -j on any Unix or Linux
'        262 263 264 265 266 267 268                                 computer.  The sunny.uni.edu
'        269 270 271 272 273                                         server you will use in 022
'                                                                    class to publish Dreamweaver
'        pandora:~/web/025> cal                                      and Flash applications is
'           September 2010                                           a UNIX machine, so cal 2010
'        Su Mo Tu We Th Fr Sa                                        and cal -j 2010 we will try.
'                  1  2  3  4
'         5  6  7  8  9 10 11
'        12 13 14 15 16 17 18             September 15th or 09/15 is Julian date 258
'        19 20 21 22 23 24 25
'        26 27 28 29 30                   09/15 is 258th day of the year during non-leap years
```

2. Write the Excel VBA sub named **`Birthdays17`**`()`. Your VBA macro SUB will generate 17 different birthdays and place those 17 birthdays in ROWS 2 through row 18, in honor of highway 218, btw. Assume row one has a column heading, such as Birthdays or Birthday Julian Date. Use the **Cells(whatRow, whatColumn)** feature of Excel VBA macros along with a For Next loop to place the 17 birthdays in the proper locations, i.e. in rows 2 through 18 and column 1 of the spreadsheet will be where the 17 random birthday dates go. (Julian dates – 365 = December 31st and 33 = February 2nd, or Ground Hogs Day. **`Birthdays17()`** is the name of your SUB. A SUB is NOT a Function. A Sub is a procedure that does something. A SUB does NOT return a result, like all VBA Functions do.

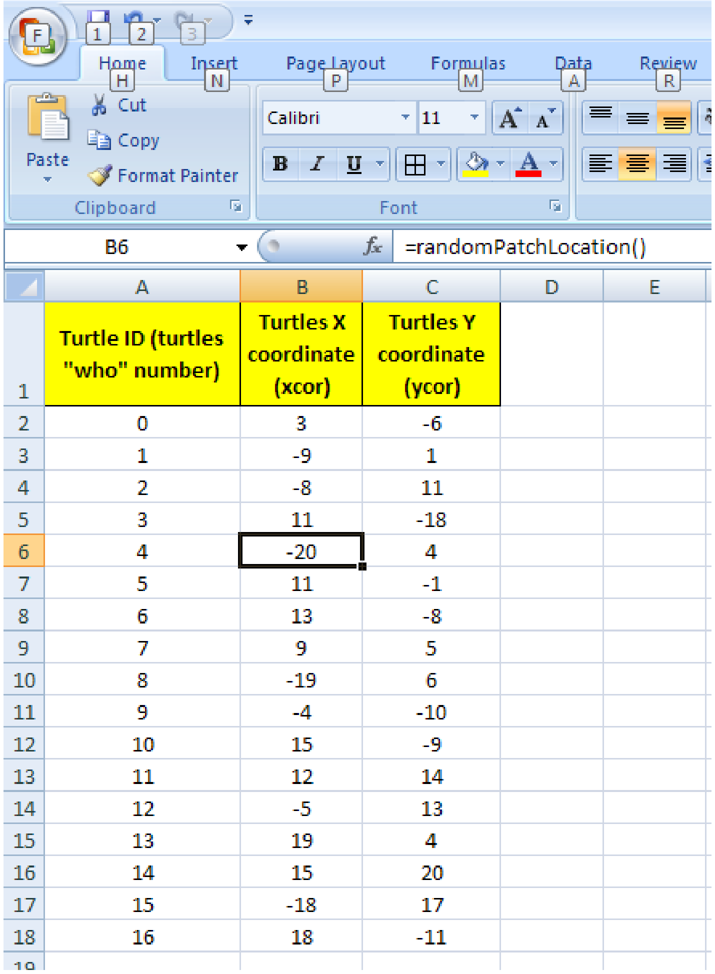
```
Sub Birthdays17()

End Sub
```

3. Write the Excel VBA function that will return a random integer between -20 and +20. Name your function **randomPatchLocation()**. It will be used in a game that randomly places NetLogo turtles on a grid where the X coordinates go from -20 to + 20 and the Y coordinates also go from -20 to 20. The turtle world has 41 rows and 41 columns. There is a row 0 and a column 0. There are 41 integer numbers between -20 and +20, inclusive.

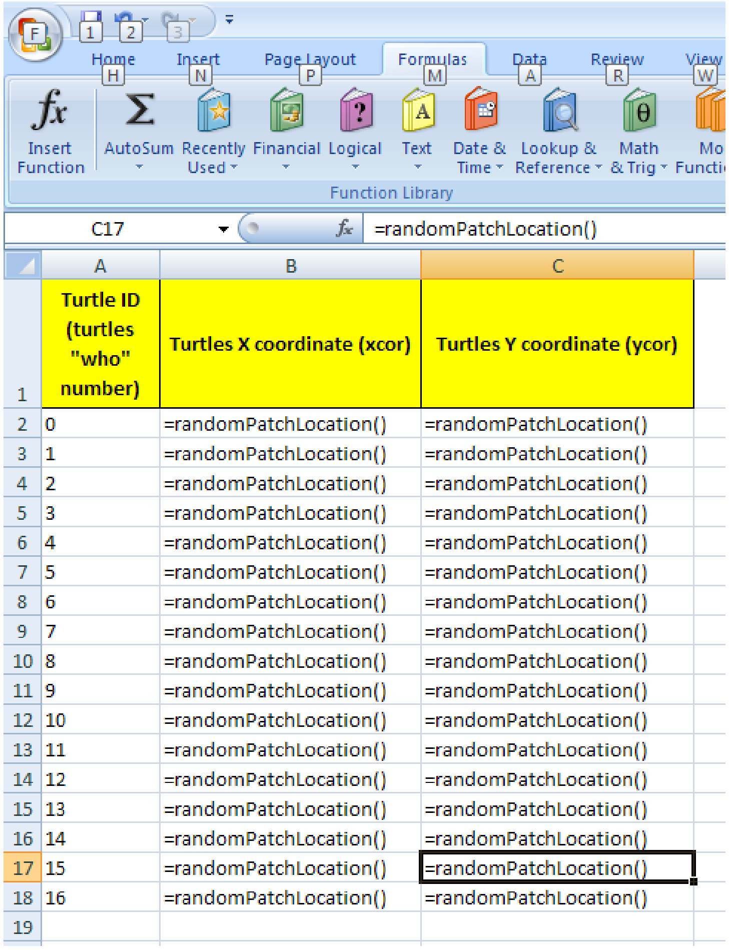
   This function has NO arguments. You do NOT give the function any input. See question #4 here for an example of a function that does take arguments. #4 function randomInteger() takes TWO ARGUMENTS as its input.

   Here is how you might use the function in a spreadsheet cell: =randomPatchLocation()



B6 =randomPatchLocation()

	A	B	C	D	E
1	Turtle ID (turtles "who" number)	Turtles X coordinate (xcor)	Turtles Y coordinate (ycor)		
2	0	3	-6		
3	1	-9	1		
4	2	-8	11		
5	3	11	-18		
6	4	-20	4		
7	5	11	-1		
8	6	13	-8		
9	7	9	5		
10	8	-19	6		
11	9	-4	-10		
12	10	15	-9		
13	11	12	14		
14	12	-5	13		
15	13	19	4		
16	14	15	20		
17	15	-18	17		
18	16	18	-11		



C17 =randomPatchLocation()

	A	B	C
1	Turtle ID (turtles "who" number)	Turtles X coordinate (xcor)	Turtles Y coordinate (ycor)
2	0	=randomPatchLocation()	=randomPatchLocation()
3	1	=randomPatchLocation()	=randomPatchLocation()
4	2	=randomPatchLocation()	=randomPatchLocation()
5	3	=randomPatchLocation()	=randomPatchLocation()
6	4	=randomPatchLocation()	=randomPatchLocation()
7	5	=randomPatchLocation()	=randomPatchLocation()
8	6	=randomPatchLocation()	=randomPatchLocation()
9	7	=randomPatchLocation()	=randomPatchLocation()
10	8	=randomPatchLocation()	=randomPatchLocation()
11	9	=randomPatchLocation()	=randomPatchLocation()
12	10	=randomPatchLocation()	=randomPatchLocation()
13	11	=randomPatchLocation()	=randomPatchLocation()
14	12	=randomPatchLocation()	=randomPatchLocation()
15	13	=randomPatchLocation()	=randomPatchLocation()
16	14	=randomPatchLocation()	=randomPatchLocation()
17	15	=randomPatchLocation()	=randomPatchLocation()
18	16	=randomPatchLocation()	=randomPatchLocation()
19			

4. Write the Excel VBA function that takes arguments, also called parameters. It will accept TWO arguments. Name the 1st argument **lowInteger**. Name the 2nd argument **highInteger**. Your function can be named **randomInteger**(). Your function will return a random integer number between **lowInteger** and **highInteger**. So if **lowInteger** is 1 and **highInteger** is 6, it would simulate the rolling of a die or used twice, a pair of dice.

   Examples of the use of this function: `=randomInteger(1, 6)` `=randomInteger(1, 365)`

   `=randomInteger(-20, 20)` `=randomInteger(1, 100)`