## Exam 1 Computer Programming 230 Dr. St. John Lehman College City University of New York Thursday, 1 October 2009

NAME (Printed)	
NAME (Signed)	
E-mail	

## Exam Rules

- Show all your work. Your grade will be based on the work shown.
- The exam is closed book and closed notes.
- $\bullet$  When taking the exam, you may have with you pens or pencils, and an 8 1/2" x 11" piece of paper filled with notes, programs, etc.
- You may not use a computer or calculator.
- All books and bags must be left at the front of the classroom during this exam.
- Do not open this exams until instructed to do so.

Question 1	
Question 2	
Question 3	
Question 4	
Question 5	
Question 6	
Question 7	
Question 8	
Question 9	
Question 10	
TOTAL	

L.	True or False:		
	(a) Every	thing in an Alice world is an object.	
	(b) Metho	ods cannot call other methods.	
	(c) There	e are many predefined classes in Alice that the programmer can	choose from.
	(d) A var	iable can be used anywhere in the program, even before the de	claration.
	(e) The r	andom number generation function only produces numbers bet	ween 0 and 1.
	` '	one or two parameters can be accepted by a method.	
	( )	ments in your program tell the computer how to run your program	am.
		portions of an If/Else statement must contain statements.	COIII.
	, ,	E/Else statement can be included in either part of another If/E.	lse statement
	. ,	_	ise statement.
	(j) The le	oop never stops if the condition remains false.	
2.	(a) Explain w	that a loop statement does:	
3.	Write the Alice	e commands that will modify the cow object to be 50% transparation.	rent, blue, and
	D		l
	Properties	Answer	
	color opacity		
	vehicle		
	skin texture		
	fillingStyle		
	pointOfView		
	is Showing		

- 4. To the right of each line of code, indicate the value of the logical expression after those lines have been executed.
  - (a) Continue = true

Stop = false

(b) = -1	h - 2	c - 5	

- (c) (no change)
- (d) Increment a by 1
- (e) Increment b by 3
- (f) Set Value of a to b+c
- $\left(g\right)$  Set Value of Stop to true
- (h) (no change)
- (i) (no change)
- (j) (no change)

expression	True or False?
!Stop	

expression	True or False?
(c - 2) == 0	

expression	True or False?
a.l. 0	
a != 0	

expression	True or False?
0	
a == 0	

expression	True	or	False?
b == c			

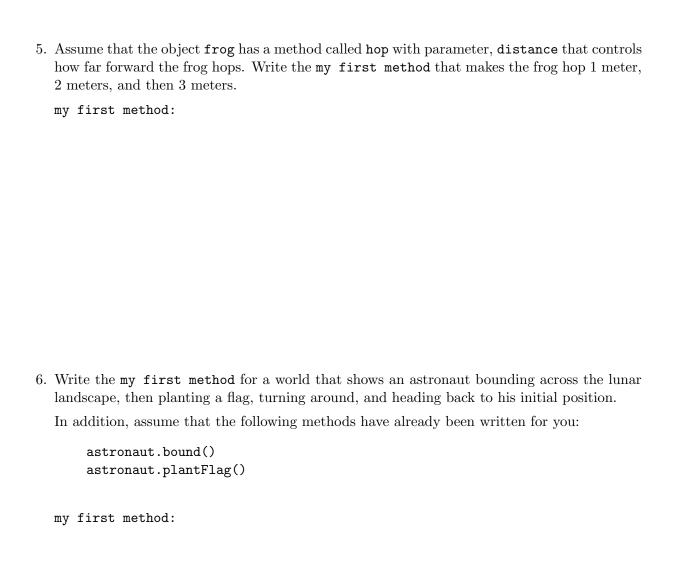
expression	True	or	False?
(a == 0) AND Stop			

expression	True	or	False?
!Stop OR Stop			

expression	True or False?
!Continue AND Stop	

expression	True or False?
$(a \ge b/2)$ AND $(c \ge b)$	

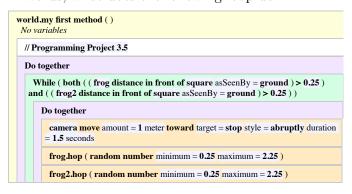
expression	True	or	False?
(IDEED : 1 ( /o) o			
(IEEERemainder of $c/2$ ) == 0			



7. (a) Write an If/Else statement that causes an object called bunny to double in size 30% of the time.

(b) Write an If/Else statement that causes an object called bunny to turn red if it is within 2 meters of an an object called stove, otherwise the bunny should turn blue

8. In words, what does the following loop do?



Write the my first method which contains a Loop statement that causes an object skater to spin in place 10 times. You may assume that the method skater.spin already exists.
my first method:

10. Write the method DeliverCrate method for the object Blimp. Your method should check to see if the Blimp is directly above the Boat using the is Above function. If it is, an object Crate should fall from the blimp to the boat (it may miss). The crate then "disappears" (ie becomes invisible and returns to the blimp). This should be repeated forever.

(Suggestions: You may assume that the blimp is always 50 meters from the ocean. Further, making the blimp the "vehicle" for the crate will make it travel with the blimp.)