

NAME: \_\_\_\_\_

This is a bunch of questions from previous tests that you can use to study. Ignore the total point value. Be sure to understand all the programs we wrote in class and assignments we did in NetLogo!!!

1. ( 40 pts ) Short answer (only a few words). Be clear and not vague!
  - a. Name two of the contexts for execution of commands in NetLogo.
  - b. In moving from Scratch to NetLogo we now had to deal with typing in commands which means you could get what important new class of errors? hint: a missing bracket is one of these type of errors.
  - c. The world in NetLogo is divided up into a grid of little squares called what?
  - d. The world in NetLogo is has “agents” that move around called turtles. Name three properties that a turtle has. By turtle property I mean some value you can set for each turtle.
  - e. In NetLogo when you wanted to input the value of a numerical global variable over a range of values we often attached the variable to what kind of interface element?
  - f. In NetLogo Code tab what is the purpose of the green check-mark in the tool bar?
  - g. What are the classic names for the two routines found in most NetLogo programs?
  - h. What NetLogo command do you type at the beginning of the code for a procedure and what command marks the end of the procedure.
  - i. What is the “who number”?

- j. What is the result of:  $10 \bmod 7$  ?
  - k. In general terms what does: random 10 do?
  - l. In general terms what does: random-float 10 do?
2. ( 10 pts ) Write the NetLogo code that would attach local variables **tom** and **jerry** to each turtle.
3. ( 10 pts ) What is meant by a global variable?
4. ( 15 pts ) Write the classic **wiggle** routine that we analyzed in class. Assume there is a global variable **angle** that is already defined and the turtle advances by 1 unit every time it is called. Be sure to write the line that creates the procedure and the one that ends the procedure.
5. ( 10 pts ) When the angle is small in the wiggle routine does the turtle stay local or move around the screen more?

6. ( 10 pts ) Write NetLogo code that will randomly turn about 15% of the patches yellow.
  
7. ( 10 pts ) Write the NetLogo code that would create 1000 turtles and sets their color to blue.
  
8. ( 10 pts ) Write the NetLogo code that would tell all the turtles to point north, that is make them head in the "0" direction.
  
9. ( 15 pts ) Write the NetLogo code that would have a turtle draw a square 18 units in length on a side. I don't care what the orientation of the square is, just draw a square. Hint see the turtle dance program and remember the pen-down command
  
10. ( 10 pts ) Write the NetLogo code that when the variable **cat** is greater than zero it will set the variable **dog** to the value of **cat** otherwise it will set the value of **cat** to 33.
  
11. ( 15 pts ) Write the NetLogo code that acts like a case statement and does the following:  
set the turtle color to red if the turtle color is blue;  
set the turtle color to blue if the turtle color is red;  
if the turtle color is some other color it will set the turtle color to orange. You are required to use a cascade

of ifelse statements to solve this problem so that only once case is chosen. Be careful with your brackets.

12. ( 15 pts ) In the game of life did we use turtles? If so, what did we use turtles for?
  
13. ( 10 pts ) Write code for a turtle that will tell all the turtles on the same patch as it to set their color to red.  
Hint: look at the infection code.
  
14. ( 10 pts ) Write the NetLogo code to decrement the variable **immune** by 1. Decrement means to subtract 1 from the variable.
  
15. ( 10 pts ) Write the NetLogo code that will create 1000 turtles and positions each at a random x, y coordinate.
  
16. ( 10 pts ) My program has an error when I ask the observer to do the command "fd 1". Why?
17. ( 10 pts ) How do I get the Go button to repeat forever?
18. ( 10 pts ) Write the NetLogo code that will compute how many of a patch's neighbors are green?

19. ( 10 pts ) What is the NetLogo command that causes a rabbit to commit suicide?
20. ( 10 pts ) What is the NetLogo command that causes a rabbit to be born to a rabbit?
21. ( 10 pts ) Show me the NetLogo code to make a turtle turn around and go back the way it came. We did that in the dance program and in the blocks program.
22. ( 10 pts ) Netlogo is a language designed for what purpose? (answer: modeling or simulation)
23. ( 10 pts ) Write the Netlogo code to plot the number of turtles that are red in color.