|  |
| --- |
| **Overview - EDIT this document and turn it in!** |

While loops are useful for repeating part of your code. They run "while" a Boolean condition is met.

|  |
| --- |
| **Part 0: Boolean expressions** |

1. Assume the user is currently pressing only the "a" key on their keyboard:  
   let makeArcs = keyIsPressed && ( (key === "a") || (key === "A") );  
   Is makeArcs true or false? TRUE
2. Assume the user is currently pressing only the "a" key on their keyboard:  
   let makeSomethings = keyIsPressed || ( (key === "a") && (key === "A") );  
   Is makeSomethings true or false? FALSE
3. Assume the user is currently pressing only the "a" key on their keyboard:  
   let isAllTrue = keyIsPressed && (key === "a") && (key === "A");  
   Is isAllTrue true or false? FALSE
4. Circle all the Boolean expressions below that evaluate to true:
   1. true && false && true && true
   2. true || false || true || true CIRCLE
   3. (mouseX < 10) && (mouseX > 100)
   4. (10 <= 234) && (10 != 0) CIRCLE
   5. (8 % 2) === 0 CIRCLE
   6. (8.0401 % 2) === 0
   7. !( (90/10) != 9 )
   8. !( 50 < 60)

|  |
| --- |
| **Part 1: Write a while loop** |

Write a while loop within a setup() function that will satisfy the following conditions:

* Draw a series of rectangles starting in the upper-left corner (0, 0) of the window.
* The first rectangle should have a width and height of 10.
* As the loop continues, the width and height of every successive rectangle should increase by 15.
* The starting location of every successive rectangle (X and Y) should increase by 10.
* There should be a total of 20 rectangles drawn in setup().

|  |
| --- |
| **Part 2: Infinite or finite?** |

Determine whether the following loops are infinite or finite. If the loop is infinite, correct the code to make it finite. You may need to declare additional variables, add additional code, or change the code inside the loops.

1. let x = 0.1;

while (x != 1.1) {

print(x);

x = x + 0.3;

}

Finite or infinite? \_\_\_\_\_\_\_\_\_\_\_ Finite \_\_\_\_\_\_\_\_\_\_\_

2. let iLoveProgramming = true;

while (iLoveProgramming) {

print(“I Love Programming!”);

}

Finite or infinite? \_\_\_\_\_\_\_\_\_\_ infinite \_\_\_\_\_\_\_\_\_\_\_\_

3. let counter = 0;

while (counter < 10) {

rectangleWidth = rectangleWidth + 10;

counter = counter + 1;

}

Finite or infinite? \_\_\_\_\_\_\_\_\_\_\_ Finite\_\_\_\_\_\_\_\_\_\_\_

When the loop finishes, what will be the value of:

rectangleWidth \_\_\_\_\_\_\_100\_\_\_\_\_\_\_

counter \_\_\_\_\_\_\_\_10\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **Part 3: While loops and variables** |

1. Using the code as your guide, calculate the myScore variable’s values *after* the while loop has fully run and exited.

let myScore;

function setup(){

myScore = 0;

}

function draw(){

while(myScore < 10){

myScore = myScore + 2;

}

}

myScore holds: \_\_\_\_\_\_\_10\_\_\_\_\_\_\_\_\_

2. Using the code as your guide, calculate the myScore variable’s values *after* the while loop has fully run and exited.

let myScore;

function setup(){

myScore = 0;

}

function draw(){

while(myScore != 9){

myScore = myScore + 2;

}

}

myScore holds: \_\_\_\_\_\_\_\_ undefined because the loop is infinite \_\_\_\_\_\_\_\_

**Save this document and upload it to the appropriate dropbox by next class.**