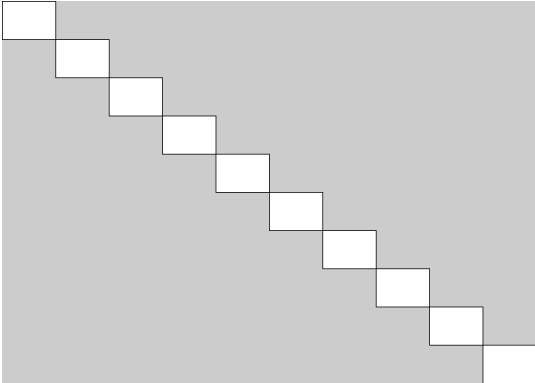


Your Name:

Lab#4: Week of October 5,2020

Due by midnight on your lab day.

Question 1. Drawing rectangles along the diagonal. In this question, the canvas might not be square and the number of rectangles we wish to draw can change.



(a). Suppose the canvas has dimensions (700, 500). If we want 2 rectangles, what should the width and height of these rectangles be?

(b). Suppose the canvas has dimensions (700, 500). If we want 10 rectangles, what should the width and height of these rectangles be?

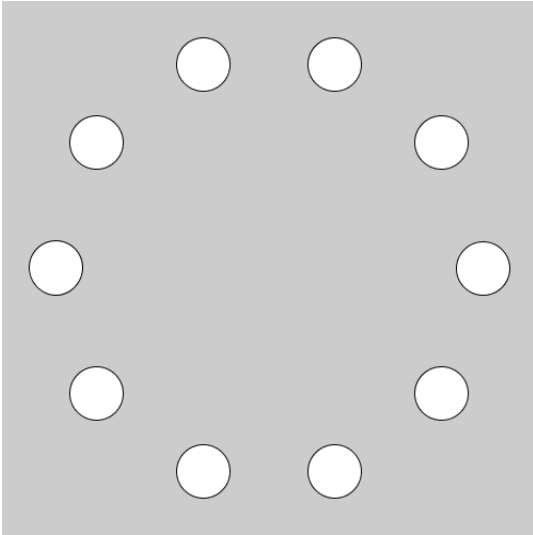
(c). Given the variables `width` and `height` of the canvas, derive a formula for the width and height of each rectangle.

(d). Implement a program (sketch) that draws rectangles along the diagonal. Check that your program works for different sizes of canvas and different numbers of rectangles. Below is starter code

```
int numRectangles = 10;

void setup() {
  size(700, 500);
  // Your code here - draw rectangles diagonally using a loop
}
```

Question 2. Write a program that draws N circles arranged in a circle.



```
int numCircles = 10;
float radius = 200;

void setup() {
  size(500,500);

  // Your code here
}
```

(a). If we have 10 circles arranged evenly as above, what is the size of the angle between each circle (in degrees or radians)?

(b). Above, the circles are centered in the middle of the canvas. What formulas would we use to center the circles at position (400,100)?