Practice Questions!

Name _____

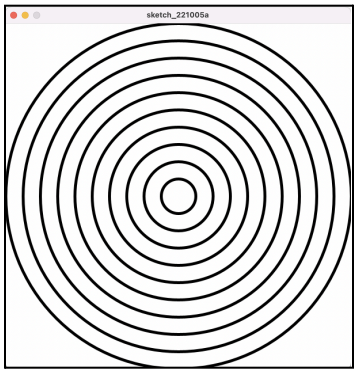
Block _____

1. Read the following sketch, and then draw the output on the provided grid on the next page. Please be aware that the goal is to accurately reproduce the output of the code, not to necessarily draw an attractive house! If a shape would be drawn outside of the window, you do not need to draw it. If a shape is drawn partially outside the window, you only have to draw the part that would be visible. (6 marks)

```
void setup() {
  size(600, 700);
}

void draw() {
  drawHouse(50, 150);
}

void drawHouse(int x, int y) {
  pushMatrix();
  translate(x, y);
  walls(500, 500);
  roof();

  pushMatrix();
  translate(50, 150);
  window(0, 0);
  popMatrix();

  window(200, 150);
  door(200, 350);
  popMatrix();

  window(350, 150);
}

void walls(int a, int b) {
  rect(0, 0, a, b);
}

void roof() {
  triangle(0, 0, 150, -100, 300, 0);
}

void window(int x, int y) {
  pushMatrix();
  translate(x, y);
  rect(0, 0, 100, 100);
  line(50, 0, 50, 100);
  line(0, 50, 100, 50);
  popMatrix();
}

void door(int x, int y) {
  rect(x, y, 50, 150);
  rect(x+50, y, 50, 150);
```

2. For this question, do not include stroke, fill, strokeWeight, size or anything other than the code necessary to make the question work. There is also no need to include void setup() and void draw(). Assume the default settings for Processing are in effect.

Write a while loop that produces the picture to the right. The sketch window is 600 x 600, and the diameter of each circle changes by one tenth of the sketch's width.



3. A student wants to write a void function called "randomCircle" that takes a single float parameter, n. The function draws a circle with a diameter of 50 on the screen, with a random x and y coordinate between 0 and n. Write this function in the space below, making use of the pushMatrix, popMatrix, and translate functions for full credit.

Here is the grid to draw the output for the sketch answer for Question 1: