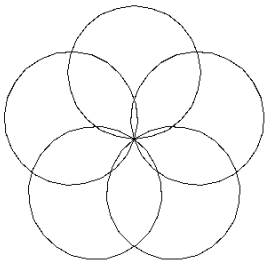
Name: _____ Andrew Id: _____

15-112 Spring 2021 Quiz 02
15 minutes.

1. Reasoning over Code [3 pts] Consider the following function:

```
def drawFlower(x, y):
    for i in range(x):
        circle(75)
        right(y)
```

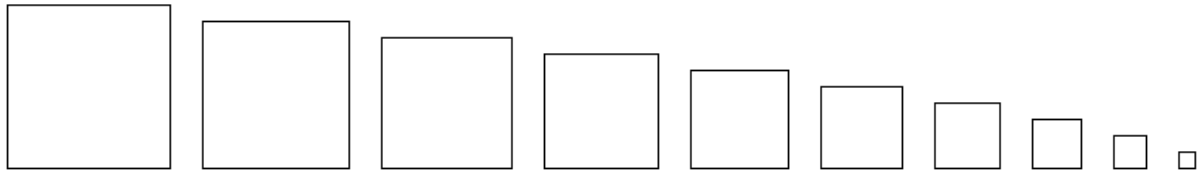
Find values for `x` and `y` that cause this function to produce the following picture:



Note: Just to clarify, your answer should be one value for `x` and one value for `y`.

2. Free Response – Draw Square [4 pts] Write the function `drawSquare(n)` using the turtle library to draw a square with sides of length `n`. When the function finishes drawing the square, the turtle should end at the same location, facing the same direction, that it started at.

3. Free Response – Replicate the Picture [10 pts] Write the function `drawThing()` using the turtle library to produce the image given below. Your solution should be as succinct as possible in terms of lines of code. Any correct solution with more than eight lines of code will get only 50% of the points for this question.



Additional Information:

- There are ten squares.
- The largest square in the image has 100 unit sides, the next largest square has 90 unit sides, and each subsequent square decreases in size by 10 units per side.
- The distance between squares is 20 units.
- You can (and should) call your `drawSquare` function from the previous problem. You do not need to rewrite it. Even if your solution to `drawSquare` is incorrect, for the purposes of this problem you may assume that it is correct.

4. Code Tracing [3 pts] Draw what the following program draws. Assume that the turtle starts out facing to the right.

```
def ctHelper():
    for i in range(3):
        forward(50)
        right(120)

def ct1():
    for i in range(4):
        ctHelper()
        forward(50)
    penup()
    left(90)
    forward(100)
    left(90)
    forward(30)
    pendown()
    circle(10)
    penup()
    forward(140)
    pendown()
    circle(10)

ct1()
```