PRACTICE WITH PYTHON MODULES

CS 125

1. Choose a random number between 20 and 200, and draw a hexagon with side lengths equal to that number of pixels.
2. Print three random floating-point numbers between 0 and 1, and also print the sum of the three numbers.
3. Write a program that asks the user for the radius of a circle, and then prints the circumference and area of the circle. Use `math.pi`.
4. Write a function that asks the user for the coordinates of three points in the plane and returns the area of a triangle whose vertices are those three points. You could do this using Heron's formula:

   $$A = \sqrt{s(s-a)(s-b)(s-c)}$$

   Here a, b, c are the side lengths and $s = \frac{a+b+c}{2}$ is the semiperimeter of the triangle.
5. Write a program that uses the random module to simulate ten rolls of a standard six-sided die, and then prints the sum of the rolls. Can you do this in six lines of code or less?
6. Write a program that approximates π by computing a partial sum of the following infinite series:

   $$\pi \approx 3 + \frac{4}{2 \cdot 3 \cdot 4} - \frac{4}{4 \cdot 5 \cdot 6} + \frac{4}{6 \cdot 7 \cdot 8} - \frac{4}{8 \cdot 9 \cdot 10} + \cdots$$

   In other words, your program should add up some number of terms of this infinite sum, and print the result. The more terms you add, the better your approximation should be.