CSCI 107, First Practicum – Friday, September 30, 2016

Name _____

Question One. 30 points. Complete the program below using a **for loop**. The sample output below shows what the program should produce when the user enters a 7. The first line is right justified in a field width of 1, the second line is right justified in a field width of 2, etc. Hint: If **number** contains an integer, you can convert it to a string with the statement **str(number)**

```
Enter a positive integer from 1 to 9: 7
1
 2
  3
   4
    5
     6
      7
```

number = input("Enter a positive integer from 1 to 9: ")

number = int(number)

Question Two. 40 points. A sprite is a simple spider shaped thing with n legs coming out from a center point. The angle between each leg is 360 / n degrees. Write a program to draw a **green** sprite where the number of legs is a positive integer provided by the user and each leg is 20 pixels long. For example, if the user inputs 7, the sprite below is drawn with its body centered:

Question Three. 30 points. In high school, one learns how to solve the equation **ax + b = 0** for x when a and b are given and a is not equal to 0.0. Write a Python program that automates this task. The program should first ask the user for the values of **a** (2.5 in the example below) and **b** (7.5 in the example below). The program should then calculate and print the value for **x** that makes the equation true (-3.0 in the example below). Match the output in the sample transcript below exactly.

```
Enter a: 2.5
Enter b: 7.5
The equation ax + b = 0 when x = -3.0
>>>
```