Homework:

due Monday, May 18, 2020
Please submit as pdf with code followed by a few test cases. Screenshots are ok.

(1) Implement functions of n that calculate the following series. The sine function is part of the math module, so you need to say import math in the first line of your script. π is also in the math module and accessible as `math.pi`.

    a. $\displaystyle\sum_{i=1}^{n} \sin\left(\frac{i}{\pi}\right)$

    b. $\displaystyle\prod_{i=1}^{n}\left(1 - \frac{1}{4i^2}\right)$

(2) Implement a function that implements a guessing game. The function generates a random integer between 1 and 100 (see below). It then asks the user repeatedly for guesses of the number, telling the user whether the user has (a) guessed the number correctly, (b) guessed too low, or (c) guessed to high.

To generate a random number, use the random module. The following code prints out a random number.

```
import random

x = random.randint(1,100)    #x is the random number
print(x)
```