Exercise 2

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Exercise 2

10 points possible (graded)

ESTIMATED TIME TO COMPLETE: 18 minutes

This problem will ask a series of questions about generators.

1. Thinking about the `genPrimes` generator from the last problem, which of the following can be done only by using a generator, instead of defining a function (that uses any type of construct we've learned about, except generators)?

   - Return 1000000 prime numbers
   - Print every 10th prime number, until you've printed 20 of them
   - Keep printing the prime number until the user stops the program
   - Everything that can be done with generator can be done with a function

2. Every procedure that has a `yield` statement is a generator.

   - True
   - False

3. If a procedure has only one `yield` statement, but that statement will never be executed, then the procedure is not a generator.

- ○ True
- ○ False

4. If we were to use a generator to iterate over a million numbers, how many numbers do we need to store in memory at once?

- ○ 1
- ○ 2
- ○ 1000
- ○ 1000000
- ○ Don't need to store anything in memory

For the following tasks, would it be best to use a generator, a standard function, or either?

1. Finding the nth Fibonacci number

- ○ Generator
- ○ Standard function
- ○ Either a generator or standard function is fine

2. Printing out an unbounded sequence of Fibonacci numbers

- Generator
- Standard function
- Either a generator or standard function is fine

3. Printing out a bounded sequence of prime numbers, where the prime numbers are successively computed by division by smaller primes

- Generator
- Standard function
- Either a generator or standard function is fine

4. Printing out an unbounded sequence of prime numbers, where the prime numbers are successively computed by division by smaller primes

- Generator
- Standard function
- Either a generator or standard function is fine

5. Finding the score of a word from the 6.00x Word Game of Pset 4

- Generator

- Standard function
- Either a generator or standard function is fine

6. Iterating over a sequence of numbers in a random order, where no number is repeated

- Generator
- Standard function
- Either a generator or standard function is fine

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