Primes

**Prime number check:**

**def** isprime**(**n**):**

**if** n **<** 2**:** **return** **False**

**if** n **<** 4**:** **return** **True**

**if** **not** n **%** 2**:** **return** **False**

**if** **not** n **%** 3**:** **return** **False**

i **=** 5

w **=** 2

**while** i **\*** i **<=** n**:**

**if** **not** n **%** i**:** **return** **False**

i **+=** w

w **=** 6 **-** w

**return** **True**

**Prime generator (Sieve of Eratosthenes):**

Note that this returns a generator that needs to be iterated over/called with next().

n is the number of primes to generate. Not setting n will make an infinite generator.

**def** primes**(**n **=** **-**1**):**

D **=** **{}**

q **=** 2

**while** **True:**

**if** n **==** 0**:** **return**

p **=** D**.**pop**(**q**,** **None)**

**if** p**:**

x **=** p **+** q

**while** x **in** D**:** x **+=** p

D**[**x**]** **=** p

**else:**

D**[**q**\***q**]** **=** q

**yield** q

n **-=** 1

q **+=** 1