COMP110 Introduction to Computer Programming Using MATLAB

Homework #5

Due: March 21, 2018, Wednesday, 23:59.

Prime pairs that yield primes

A **prime number** is a number that can be divided without remainder only to 1 and itself. You can find out that a number *p* is prime by dividing it by all numbers between 2 and $\sqrt{p}$, and verifying that the remainders in all such divisions are non-zero.

Consider the pairs of *successive* prime numbers, such as (2, 3), (3, 5), (5, 7), (7, 11), (11, 13), (13, 17), etc. Write a program that finds the first ten successive prime pairs (p, q), such that pq+p+q is also a prime number.

While writing this program, you are expected NOT to use vectors (arrays) or any MATLAB functions that automatically give you prime numbers, such as primes(), isprime(), etc.

The output of the program should look **exactly** as below:

```
For (2,3), 2x3+2+3= 11 is a prime.
For (3,5), 3x5+3+5= 23 is a prime.
For (5,7), 5x7+5+7= 47 is a prime.
For (7,11), 7x11+7+11= 95 is NOT a prime.
For (11,13), 11x13+11+13= 167 is a prime.
For (13,17), 13x17+13+17= 251 is a prime.
For (17,19), 17x19+17+19= 359 is a prime.
For (19,23), 19x23+19+23= 479 is a prime.
For (23,29), 23x29+23+29= 719 is a prime.
For (29,31), 29x31+29+31= 959 is NOT a prime.
For (31,37), 31x37+31+37= 1215 is NOT a prime.
For (37,41), 37x41+37+41= 1595 is NOT a prime.
For (41,43), 41x43+41+43= 1847 is a prime.
For (43,47), 43x47+43+47= 2111 is a prime.

>>
```

Make your program as structured as possible. Apply proper indentations. Never use BREAK, CONTINUE or RETURN.

Name your MatLab m-file as h05*yourlastname*.m and then upload it to Blackboard Learn at http://ku.blackboard.com. Anyone e-mailing his/her homework will lose points!

While doing all your homework assignments, remember that:

- ***You should not work together,***
- ***You should not give or take any files,***
- ***You should not give or take help other than simple verbal hints.***