Is it a Valid Triangle?

If you have 3 straws, possibly of differing lengths, it may or may not be possible to lay them down so that they form a triangle when their ends are touching. For example, if all of the straws have a length of 6 inches, then one can easily construct an equilateral triangle using them. However, if one straw is 6 inches long, while the other two are each only 2 inches long, then a triangle cannot be formed.

Write a function that determines whether or not three lengths can form a triangle. The function will take 3 parameters and return a Boolean result. In addition, write a program that reads 3 lengths from the user and demonstrates the behaviour of this function.

Twin Primes

The numbers "twin primes" are that pair of prime numbers that differ by 2; for example, 3 and 5 are "twin primes". Write a program that prints all the "twin primes" from 1 to 1000 using functions.

Is a Number Prime? (PS28L)

A prime number is an integer greater than 1 that is only divisible by one and itself. Write a function that determines whether or not its parameter is prime, returning true if it is, and false otherwise. Write a main program that reads an integer from the user and displays a message indicating whether or not it is prime. Ensure that the main program will not run if the file containing your solution is imported into another program.

LCM with HCF (CS33L)

Write a program that calculates the Lowest Common Multiple (LCM) of any two integers, using the Highest Common Factor (HCF). For example: The LCM of 15 and 20 is 60.

Reduce a Fraction to Lowest Terms

Write a function that takes two positive integers that represent the numerator and denominator of a fraction as its only two parameters. The body of the function should reduce the fraction to lowest terms and then return both the numerator and denominator of the reduced fraction as its result. For example, if the parameters passed to the function are 6 and 63 then the function should return 2 and 21. Include a main program that allows the user to enter a numerator and denominator. Then your program should display the reduced fraction.

Does a String Represent an Integer? (PS30L)

In this exercise you will write a function named **isInteger ()** that determines whether or not the characters in a string represent a valid integer. When determining if a string represents an integer you should ignore any leading or trailing white space. Once this white space is ignored, a string represents an integer if its length is at least 1 and it only contains digits, or if its first character is either + or – and the first character is followed by one or more characters, all of which are digits. Write a main program that reads a string from the user and reports whether or not it represents an integer. Ensure that the main program will not run if the file containing your solution is imported into another program.