

## L5 PROBLEM 5 (5 points possible)

The greatest common divisor of two positive integers is the largest integer that divides each of them without remainder. For example,

- $\text{gcd}(2, 12) = 2$
- $\text{gcd}(6, 12) = 6$
- $\text{gcd}(9, 12) = 3$
- $\text{gcd}(17, 12) = 1$

A clever mathematical trick (due to Euclid) makes it easy to find greatest common divisors. Suppose that  $a$  and  $b$  are two positive integers:

- If  $b = 0$ , then the answer is  $a$
- Otherwise,  $\text{gcd}(a, b)$  is the same as  $\text{gcd}(b, a \% b)$

See this website for an example of Euclid's algorithm being used to find the gcd.  
([https://en.wikipedia.org/wiki/Euclidean\\_algorithm#Worked\\_example](https://en.wikipedia.org/wiki/Euclidean_algorithm#Worked_example))

Write a function `gcdRecur(a, b)` that implements this idea recursively. This function takes in two positive integers and returns one integer.

```
1 def gcdRecur(a, b):  
2     '''  
3     a, b: positive integers  
4  
5     returns: a positive integer, the greatest common divisor of a & b.  
6     '''  
7     # Your code here  
8
```

Unanswered

Note: In programming there are many ways to solve a problem. For your code to check correctly here, though, you must write your recursive function such that you make a recursive call directly to the function `gcdRecur`. Thank you for understanding.

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