LCM of two numbers

LCM (Least Common Multiple) of two numbers is the smallest number which can be divided by both numbers.

For example, LCM of 15 and 20 is 60, and LCM of 5 and 7 is 35.

A **simple solution** is to find all prime factors of both numbers, then find union of all factors present in both numbers. Finally, return the product of elements in union.

An **efficient solution** is based on the below formula for LCM of two numbers 'a' and 'b'.

```
a x b = LCM(a, b) * GCD (a, b)

LCM(a, b) = (a x b) / GCD(a, b)
```

Using GCD, we can find LCM.

Below is the implementation of the above idea:

Python

```python
# Python program to find LCM of two numbers

# Recursive function to return gcd of a and b
def gcd(a,b):
    if a == 0:
        return b
    return gcd(b % a, a)

# Function to return LCM of two numbers
def lcm(a,b):
    return (a / gcd(a,b))* b

# Driver program to test above function
a = 15
b = 20
print('LCM of', a, 'and', b, 'is', lcm(a, b))
```

Output

```
LCM of 15 and 20 is 60
```

Time Complexity: *O(log(min(a,b))*

Auxiliary Space: *O(log(min(a,b))*