

1. Please implement the following function *getGCD* which will return the greatest common division of *a* and *b*. You can assume that both *a* and *b* are greater than 0.

```
int getGCD(int a, int b)
```

Hint: You can implement *getGCD* by Euclid's algorithm described in [https://en.wikipedia.org/wiki/Greatest\\_common\\_divisor](https://en.wikipedia.org/wiki/Greatest_common_divisor)

2. Please finish the following class.

```
class RationalNumber
{
private:
    ...
public:
    RationalNumber()
    {
        // set the RationalNumber of 1
    }
    RationalNumber(int numerator, int denominator)
    {
        // initialize the RationalNumber to  $\frac{\text{numerator}}{\text{denominator}}$ 
        // you can assume that denominator will not be 0
    }
    void toCompact(void)
    {
        // use cout to print the RationalNumber in the form of  $\frac{p}{q}$  where p and
        // q are coprime.
    }
    // use operator overloading to that RationalNumber can be used in
    // addition(+), deletion(-), multiplication (*)
}
```

*RationalNumber* should be able to be used in the following code segment.

```
void main()
{
    RationalNumber r1, r2(2,3), r3(6,3);
```

```
    r1.toCompact();  
    r2.toCompact();  
    r3.toCompact();  
    r1=(r2+r3)*r2-r3;  
    r1.toCompact();  
}
```