```java
public class fastgcd{


    public static int gcd(int a, int b)
    {
        // assume a < b
        int answer = 1;
        for(int i=1;i<=a;i++)
            {

                if((a%i==0) && (b % i == 0))
                  {
                        answer = i;
                  }
                    System.out.println("iterations  brute force "+i);
            }

        return answer;
    }

    public static int gcd_Euclid(int a, int b)
    {



        int q=b/a;
        int r=b % a;
        System.out.println("b=" + b + " a = "+ a+ "r="+r);
        int iterationcounter = 0;
        while(r!=0)
            {
                b = (b-r)/q;
                a = r;
                q=b/a;  // integer division so for example, 20/7 = 2
                r = b % a;      // remainder so for example when b is divided by a so 20%7
 = 6

                System.out.println("b=" + b + " a = " +a + "r="+r);
                 System.out.println("iterations Euclid  "+iterationcounter);
                iterationcounter++;

            }

                return a;


    }

    public static void main(String args[])
    {

        int b = 12734567;
        int a = 12767;
        int x = gcd(a,b);
        System.out.println(x);

        int y = gcd_Euclid(a,b);
        System.out.println(y);
    }
```

```
}
```