

```

public static int gcd(int a, int b) {
    int r = 0;
    while (a % b != 0) {
        r = a % b;
        a = b;
        b = r;
    } // mod check loop
    return b;
} // gcd

```

gcd(39, 24)

Loop #	variables		Work it out
	a	b	
1	39	24	$r = 39 \% 24 = 15 \rightarrow a \% b$ $a = 24$ $b = 15$
2	24	15	$r = 24 \% 15 = 9$ $a = 15$ $b = 9$
3	15	9	$r = 15 \% 9 = 6$ $a = 9$ $b = 6$
4	9	6	$r = 9 \% 6 = 3$ $a = 6$ $b = 3$
5	6	3	$r = 6 \% 3 = 0$ $a = 3$ $b = 0$
			return 3