|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Round** | **r** | **q** | **x** | **y** |
|  | 210 |  | 1 | 0 |
|  | 154 |  | 0 | 1 |
| 1 | 210 % 154 = 56 | 210 / 154 = 1 | 1 – 1 \* 0 = 1 | 0 – 1 \* 1 = -1 |
| 2 | 154 % 56 = 42 | 154 / 56 = 2 | 0 – 2 \* 1 = -2 | 1 – 2 \* (-1) = 3 |
| 3 | 56 % 42 = **14** | 56 / 42 = 1 | 1 – 1 \* (-2) = **3** | -1 – 1 \* 3 = **-4** |
| 4 | 42 % 14 = 0 |  |  |  |

r = prevR % r

q = prevR / r

x = prevX – q \* x

y = prevY – q \* y

q: 1, r: 56, x: 1, y: -1

q: 2, r: 42, x: -2, y: 3

q: 1, r: 14, x: 3, y: -4

**Round r q x y**

210 1 0

154 0 1

1 210 % 154 = 56 210 / 154 = 1 1 – 1 \* 0 = 1 0 – 1 \* 1 = -1

2 154 % 56 = 42 154 / 56 = 2 0 – 2 \* 1 = -2 1 – 2 \* (-1) = 3

3 56 % 42 = **14** 56 / 42 = 1 1 – 1 \* (-2) = **3** -1 – 1 \* 3 = **-4**

4 42 % 14 = **0**

Equals 0 so we stop

GCD

x

y

xi+1 = xi-1 – qi \* xi

yi+1 = yi-1 – qi \* yi

**q: 0, r: 154, x: 1, y: 0**

**q: 1, r: 56, x: -1, y: 1**

**q: 2, r: 42, x: 3, y: -2**

**q: 1, r: 14, x: -4, y: 3**

**Round Remainder Quotient x y**

154 1 0

210 0 1

1 154 % 210 = 154 154 / 210 = 0 1 – 1 \* 0 = 1 0 – 1 \* 1 = -1

2 210 % 154 = 56 210 / 154 = 1 0 – 2 \* 1 = -2 1 – 2 \* (-1) = 3

3 154 % 56 = **42** 154 / 56 = 2 1 – 1 \* (-2) = **3** -1 – 1 \* 3 = **-4**

4 42 % 14 = **0**

Equals 0 so we stop

GCD

x

y