$$1000 \overline{)\,1001010\,} (1001 \quad \llcorner\!\!\rightarrow \text{quotient}$$

$$\underline{1000}$$

divisor

$$10 \rightarrow \text{dividend}$$

$$101$$

$$1010$$

$$-1000$$

$$\overline{}$$

Reminder $\rightarrow 10$

$$10 \,\big|\, 1101 \,\big|\, 110$$

$$\big|\; 10 \quad\big|$$

$$\overline{10}$$

$$-10$$

$$\overline{01}$$

$$-10$$

$$\overline{}$$

$$0000\ 1101 \longrightarrow \text{Reminder}$$
$$0010\ 0000 \longrightarrow \text{Divisor}$$

① Dividend < Divisor

   quotient = 0

   Divisor = 0001 0000

② Dividend < Divisor

   quotient = 00

   Dividend = 0000 1101
   Divisor = 0000 1000

③ ——————→ $\overline{0000\ 0101}$ ← Reminder

   quotient = 001

   Divisor = 0000 0100

④ Reminder = 0000 0101
   Divisor = 0000 0100
   ——————————
   0000 0001 → Reminder

   quotient = 0011

   Divisor = 0000 0010

Ⓥ Reminder = 0000 0001
Divisor = 0000 0010
─────────────────────
(1 1 1 1 1 1 1 1) → Minus
value

quotient = 0 1 1 0

Reminder = 0000 0001

#Optimized Divider

Divisor = 0010

Dividend = [0000] 1101

1.   0000
       0010
   ―――――――
   negative

Reminder = [0001] 101 0
                      ↑
                   Not final

2.   0001
       0010
   ――――――― → 0001 1101 0 ← final
   negative

Reminder = [0011] 01 0 0

3.   0011
     0010
   ――――――― → 0001 01 01
     0001

Reminder = [0010] 101 0

4.   0010
       0010
   ――――――― → 0000 1011
       0000

Reminder = [0001] 0110

5. 0001
    0010
   ───────────
    Negative ──→ │ 0001 │ │ 0110 │
                       ↑   ↳ quotient
                   Reminder