* Integer Replacement

$n\%2 = 0 \longrightarrow n = n/2$

$n\%2 = 1 \longrightarrow n = (n+1)$ or $n = (n-1)$

# of times ~~n=n to be~~ $n = n \rightarrow n = 1$

$7 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$

n is even $\rightarrow n/2$

n is odd $\rightarrow$

$111 \xrightarrow{+1} 1000 \rightarrow$ # of 1s = 1

$\xrightarrow{-1} 110 \rightarrow$ # of 1s = 2

take operation which is having lesser # of 1s

$1001 \xrightarrow{+1} 1010 \rightarrow 2$

$\xrightarrow{-1} 1000 \rightarrow 1$

$111 \rightarrow 1000 \rightarrow 100 \rightarrow 10 \rightarrow 1$

$1000 \rightarrow 100 \rightarrow 10 \rightarrow 1$

$1001 \rightarrow 1000 \rightarrow 100 \rightarrow 10 \rightarrow 1$

$11 \rightarrow 10 \rightarrow 1$ ✓

$\rightarrow 100 \rightarrow 10 \rightarrow 1$

$101 \rightarrow 100 \rightarrow 10 \rightarrow 1$

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