

x, y are Integers

$$x \equiv y \pmod{5} \text{ if}$$

$x - y$ is a multiple of 5

\star
 $x = 5n + y$

$\leftarrow \underline{x - y = 5 \cdot n}$ for some n .

$16 = 5 \cdot 3 + 1$ \rightarrow $16 - 1 = 5 \cdot 3$

$16 \equiv 1 \pmod{5}$

$x = 5n + 1 \rightarrow 21 \equiv 1 \pmod{5}$

$1 = 0 \cdot 5 + 1$ $1 \equiv 1 \pmod{5}$

$101 \equiv 1$

$-4 \equiv 1$

$-4 = 1 + -1 \cdot 5$

$-16 \equiv 4 \pmod{5}$

mod 5

3, 1 # 1-15 odd

$28 \equiv 3$

$75 \equiv 0$

$-3 \equiv 2$

$-12 \equiv 3 \rightarrow -7 \rightarrow -2 \rightarrow 3$

$14 \equiv 4 \quad 14 \rightarrow 9 \rightarrow 4$