

# Integer Division

Whole Numbers  
( $-\infty, \infty$ )

modulus  
\$5


9 people  
groups of 4

$8 / 4 = 2$   
 $9 / 4 = 2$   
 $10 / 4 = 2$   
 $11 / 4 = 2$

0  
1  
2  
3

\$13

$$\begin{array}{l} 11 / 4 = 2 \\ 11 \underline{\%} 4 = 3 \end{array}$$

int  mod  
modulus

5

+

-

/

\*

→ %

Catches  
the remainder  
in int division

$$x + y = z$$

$$z - y =$$

$$z - x =$$

$$\begin{array}{c}
 \begin{array}{c}
 X \\
 \text{13} \\
 X
 \end{array}
 \begin{array}{c}
 \%0 \\
 / \\
 \text{①}
 \end{array}
 y = \sum = 3 \\
 \begin{array}{c}
 \boxed{zyw} = x \\
 \boxed{zxw} = y \\
 \text{②}
 \end{array}
 \end{array}$$

$$\overset{13}{X} / \overset{5}{y} = z \quad 2 \quad |$$

$$X \% y = w \quad 3 \quad |$$

$$1 \quad (z \cdot y) + w = X$$

$$y = (X - w) / z$$

$$y \% n = [0, n-1]$$

$s_n: 1, 2, 3, 4, 5, 6, 7 \dots 95, 96$

$f(s_n): 1, 2, 3, 1, 2, 3, 1, \dots, 2, 3$

$$f(s_n) =$$

$$s_n \% 3 = 1, 2, 0, 1, 2, 0, \dots$$

2, 3, 1, 2, 3, 1,

4, 5, 3, 4, 5, 3

$$f(s_n): \quad 1 \quad 2 \quad 3 \quad 1 \quad 2 \quad 3 \quad 1 \quad 2 \quad 3 \dots$$

$$s_n: \quad 1, 2, 3, 4, 5, 6, 7, 8, 9 \dots$$

$$\frac{s_n}{3} = 0 \ 0 \ 1 \quad 0 \ 0 \ 1 \quad 0 \ 0 \ 1$$

$$s_n \% 3 + 3 \cdot \left(\frac{s_n}{3}\right)$$

$$\begin{array}{r} 1 \ 2 \ 0 \quad 1 \ 2 \ 0 \quad 1 \ 2 \ 0 \\ 1 \ 0 \ 0 \ 3 \quad 0 \ 0 \ 3 \quad 0 \ 0 \ 3 \end{array}$$


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$$\begin{aligned}(S_n - 1) \% 3 + 1 \\ (S_n + 2) \% 3 + 1 \\ S_n \% 3 + \left(\frac{S_n}{3}\right) \cdot 3\end{aligned}$$

$n \% 2 == 0$

Compare

even

$n = 2$  assign

$n == 2$

$x = 5$  assign

$x == 5$   
Compare Boolean