Modular Arithmetic & Modular Inverse

Tuesday, February 13, 2024 9:03 PM

7:30 AM
4:00 PM
} 9 hours
8:30 University
9:00 Sleep

6:00 AM
8:00 PM
} 2H

6H → Habit
productive → 2H

1:00 PM
2:00 PM
} 1H

3rd year

7:30 PM
9:20 PM
} 2H

$10 \% 2 = 0$

$10 \% 3 = 1$

$(a+b)\%M = (a\%M + b\%M)\%M$

$(a-b)\%M = (a\%M - b\%M)\%M$

$(a \times b)\%M = (\underbrace{a\%M}_{A} \times \underbrace{b\%M}_{B})\%M$

} Correct

$(a/b)\%M = (a\%M \;/\; b\%M)\%M$ } Incorrect

$\left(\frac{a}{b}\right)\%M = (a * b^{M-2})\%M$ } True

up

$$\left(\frac{a}{b}\right)\%M = (a * b^{M-2})\%M$$

$$= \left((a^{up}\%M) * (b^{M-2}\%M)\right)\%M$$

up

down

$(a^b \%M)$

↳ BigMod

$$nCk = \frac{n!}{k!\,(n-k)!}\ \%M$$