$$\frac{\overset{+3}{7343} + \overset{-1}{9049} + \overset{-1}{9969}}{5}$$

$\frac{1}{5}$ $R = 1$

1

$$\frac{98\underline{5}7 \times 87\underline{79} \times 399}{\cancel{12}\ 4}$$

$= \frac{3}{4}$

$R = 3 \times 3$

$R = 9$

$$6347^{+2} \times 9347^{+2} \times 6949^{+4} \times \cancel{3114}\ 346^{+1}$$

$\cancel{4}5$

5

$\frac{16}{5}$, $R = 1 \times 9$

$= 9$

$$\frac{\lfloor 1 + \lfloor 2 + \lfloor 3 + \lfloor 4 + \lfloor 5 + \lfloor 6 + \cdots \lfloor 1000}{\lfloor 5}$$

$$\frac{1 + 2 + 6 + 2}{120}$$

$R = 33$

Fermat's remainder theorem

$$\frac{N^{P-1}}{P}, \text{ Remainder} = 1$$

$$\frac{99^{16}}{17}$$

$$\frac{2^{100}}{101}, R = 1$$

P is prime number

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(N, P) H.C.F $= 1$

$$\frac{7^{82}}{11} \rightarrow = \frac{(7^{10})^8 \times 7^2}{11}$$

$$\frac{7^{10}}{11} \quad R = 1$$

$$\frac{1^8 \times 49}{11} \quad , R = 5$$

$$\frac{(12)^{182}}{19} = \frac{(12^{18})^{10} \times 12^2}{19}$$

$$\frac{12^{18}}{19}, R = 1$$

$$\frac{1 \times 144}{19}$$

$R = 11$

Willson Reminder theorem

$$\frac{96}{7}$$

$$97$$

$$\frac{1 \times 2 \times 3 \times \cdots \times 100}{101} = \frac{(100}{101}$$

$R = 100$

$$\frac{(12)^{388}}{143}$$

$$\frac{\left((12)^{2}\right)^{194}}{143} = 1$$

$$\frac{7^{283}}{50}$$