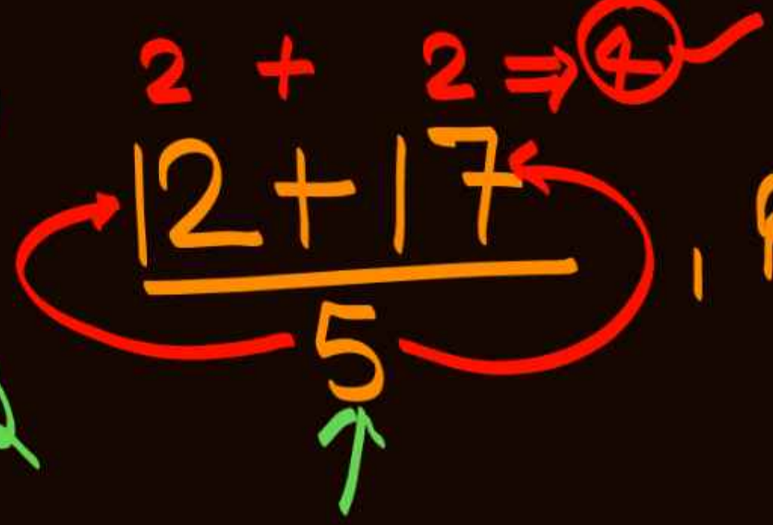
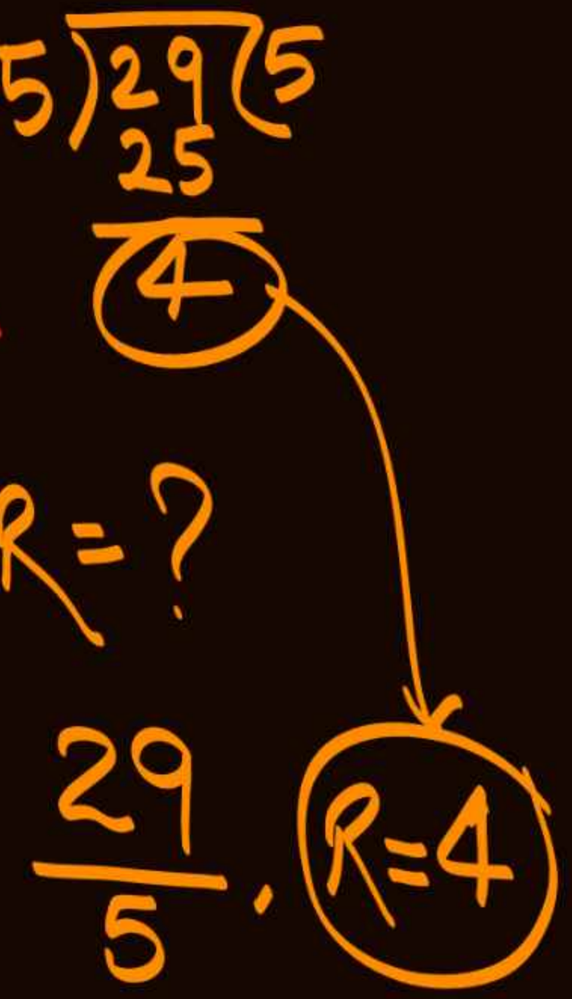
शेषफल प्रमेय
Remainder Thm.

#शेषफल हमेशा भाजक से छोटा होता है
#The Remainder is always less than divisor.



, R=?



$1+2+3+4 \rightarrow (10)$ — ढाँच

$20 \div 21 \div 22 \div 23$

$19 =$, $R = ?$ (10)

3. The remainder when 75 × 73 × 78 × 76 is divided by 34 is:

75 × 73 × 78 × 76 को 34 से विभाजित करने पर प्राप्त शेषफल ज्ञात करें।

(a) 15
(b) 18
(c) 22
(d) 12

$$\frac{75 \times 73 \times 78 \times 76}{34} \Rightarrow \frac{35 \times 80}{34} = 12$$

$$\frac{1 \times 2 \times 3 \times 4}{21 \times 22 \times 23 \times 24}$$

10 ↓ से कीय

R → Less than 10

, R=? $\frac{24}{10}$ → ④

$$\frac{1 \times 1 \times 1 \times 1 \times 1}{25 \times 25 \times 25 \times 25 \times 25} = 1$$

$$\frac{}{12}, R = ?$$

$$1^{412}$$

$$\frac{(45)^{412}}{13}, R = ?$$

$$40^4 = 40 \times 40 \times 40 \times 40$$

$$\frac{}{11}, R = ?$$

1

$$\frac{4 \times 4 \times 2 \times 1}{37 \times 48 \times 68 \times 100}$$

$$\frac{}{11}, R = ?$$

$$\frac{32}{11}, R = 10$$

2 # $\frac{(12+4)^4}{17}$, R=?

$\frac{2^4}{17} \Rightarrow \frac{16}{17}$

16 < 17

R = 16

1 # $\frac{(104)^5}{51}$, R=?

$\Rightarrow \frac{2^5}{51}$

51 × 2 ⇒ 102

$\Rightarrow \frac{32}{51}$



1. $\frac{204^5}{50}$, R = ?

$204 = 200 + 4$

$\Rightarrow \frac{(200+4)^5}{50}$

$\Rightarrow \frac{4^5}{50}$

$4^5 = 4\times4\times4\times4\times4 = 256$

$\Rightarrow \frac{256}{50}$

R = 24

यदि अंश, हर से छोटा है तो वही अंश Remainder होगा

If the numerator is Less than denominator then the numerator is Remainder in itself.

2. $\frac{(174)^5}{19}$, R = ?

$\frac{(171+3)^5}{19}$

$171 = 19\times9$

$\Rightarrow \frac{3^5}{19}$

$3^5 = 243$

$19\overline{)243}\,(12$

19

53

38

15

15

Binomial Thm (द्विपद प्रमेय) :

$$\frac{(x+a)^n}{x^n} = \frac{a^n}{x^n} + R$$

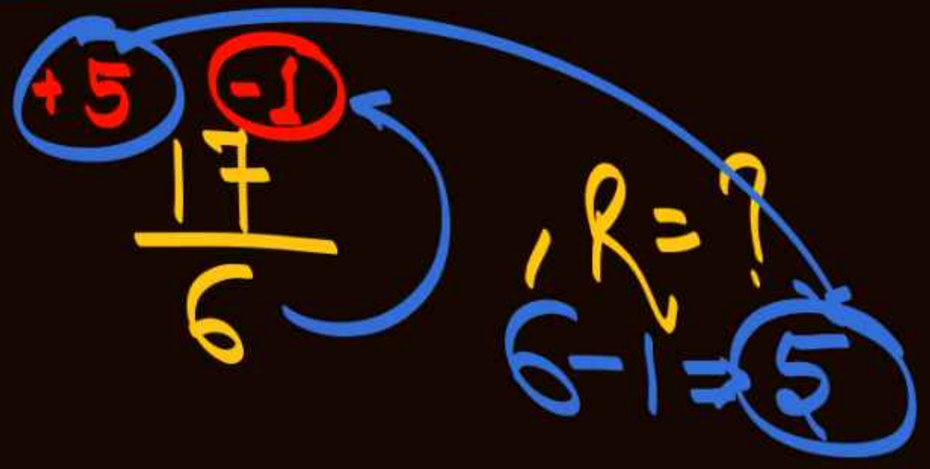
$$\left(\frac{201}{200}\right)^{401}$$

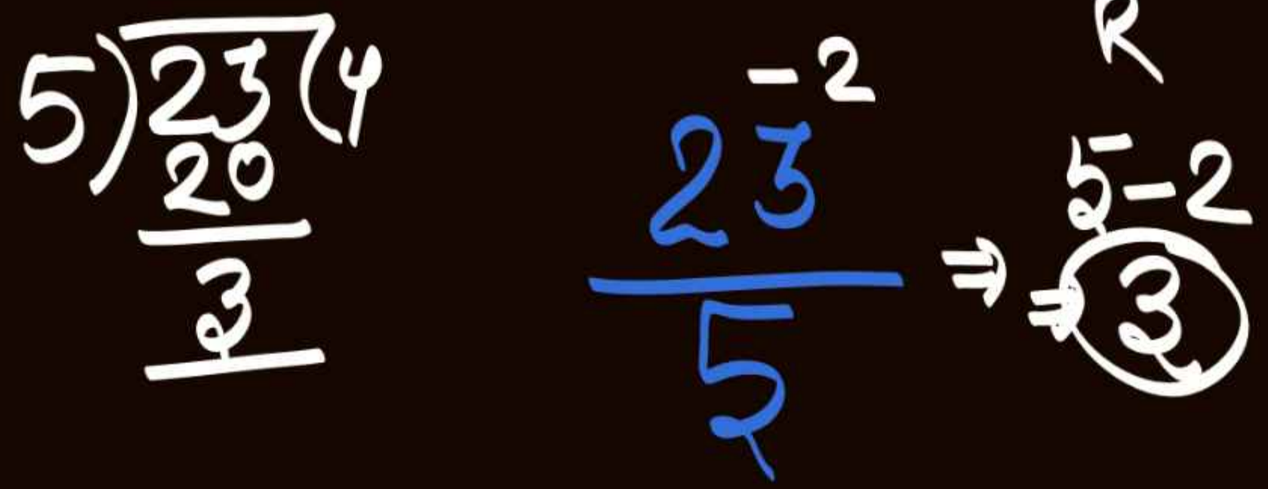
$$\Rightarrow \frac{(201)^{401}}{200}, \quad R = ?$$

$$\frac{(200+1)^{401}}{200} \Rightarrow \frac{1^{401}}{200} \Rightarrow 1$$

* Negative Remainder ऋणात्मक शेषफल :-

Remainder का Answer कभी भी Negative नहीं होगा




5)23(4
20
3
23
5
-2
R
5-2
3

② $\frac{(401)^{302}}{400} = R = ?$

1^{302}

1

① $\Rightarrow \frac{(401)^{302}}{402}$ or $R = ?$ 1

$(-1)^{302}$

Even

$\#\ (-1)^{\text{even}} \longrightarrow +1$

$(-1)^{\text{odd}} \longrightarrow -1$

1^2

$\frac{6^2}{5}$, R=? (1)

$$5 \overline{)36} \; 7$$
$$\underline{35}$$
$$1$$

(1) $\frac{(-1)^2}{6^2}$, R=? (1)

$$7 \overline{)36} \; 5$$
$$\underline{35}$$
$$1$$

power यदि odd विषम है

विषम
↑
5^{07}

$(-1)^{5^{07}}$

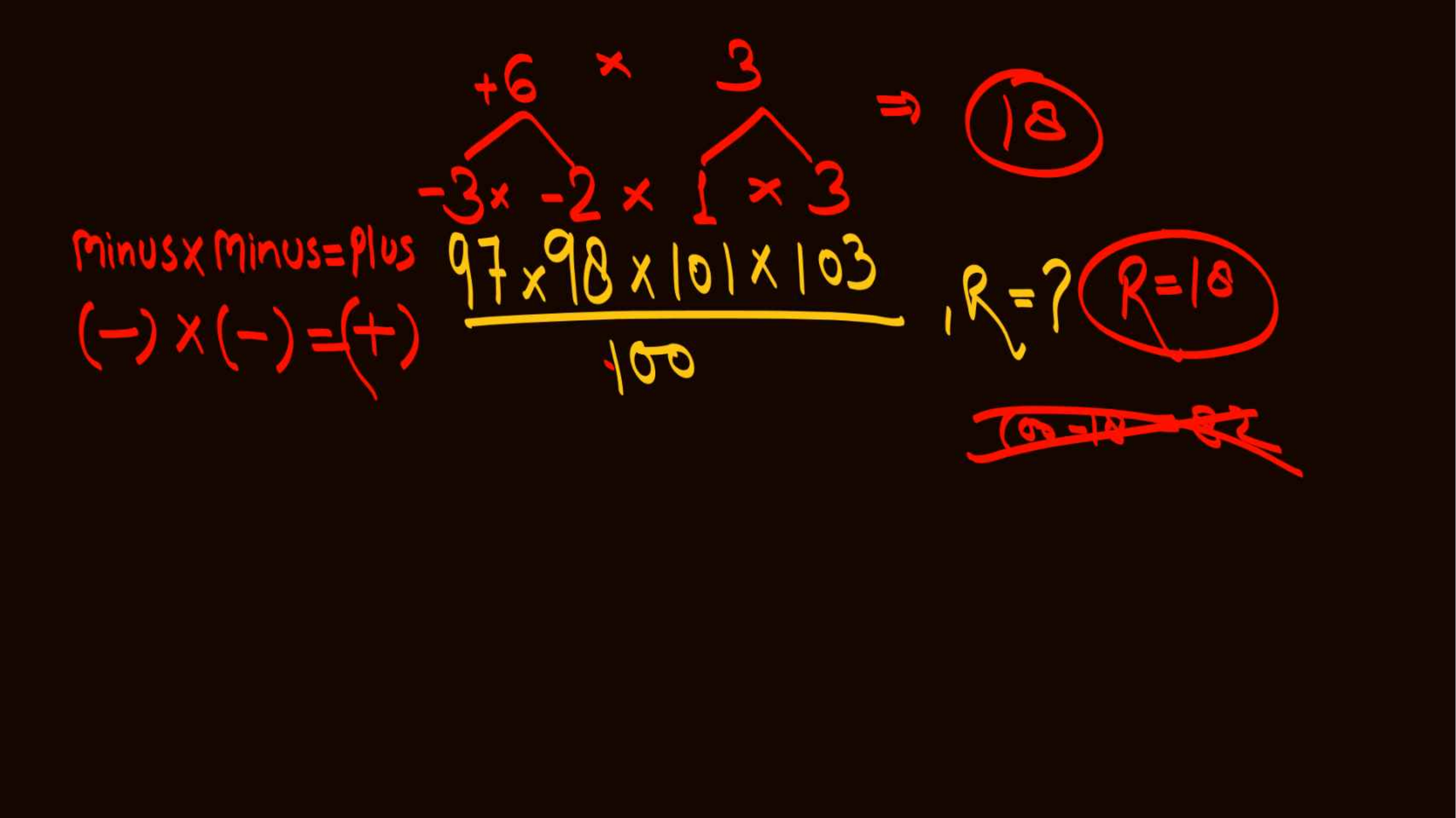
① $\Rightarrow \dfrac{(5^{07})^{5^{07}}}{5^{10}}$, $R = ?\ \dfrac{-1}{5^{10}}$

$5^{10} - 1 \Rightarrow 5^{07}$

$R = 5^{07}$

$1^{5^{07}}$

② $\dfrac{(5^{07})^{5^{07}}}{5^{08}}$, $R = ?$ 1


+6 × 3 ⇒ 18
-3 × -2 × 1 × 3
Minus x Minus = Plus
(−) x (−) = (+)
97 × 98 × 101 × 103
100
, R = ?
R = 18

$+6 \times -1 \times 2 \Rightarrow -12$

$-3 \times -2 \times -1 \times 1 \times 2$

$$\Rightarrow \frac{47 \times 48 \times 49 \times 51 \times 52}{50}$$

$R = ?$



$? = 50 - 12$

$\Rightarrow 38$

4. The remainder when 72 × 73 × 78 × 76 is divided by 35 is:

72 × 73 × 78 × 76 को 35 से विभाजित करने पर प्राप्त शेषफल ज्ञात करें।

(a) 12

(b) 15

(c) 22

(d) 8

