

Number Based Reasoning ✓

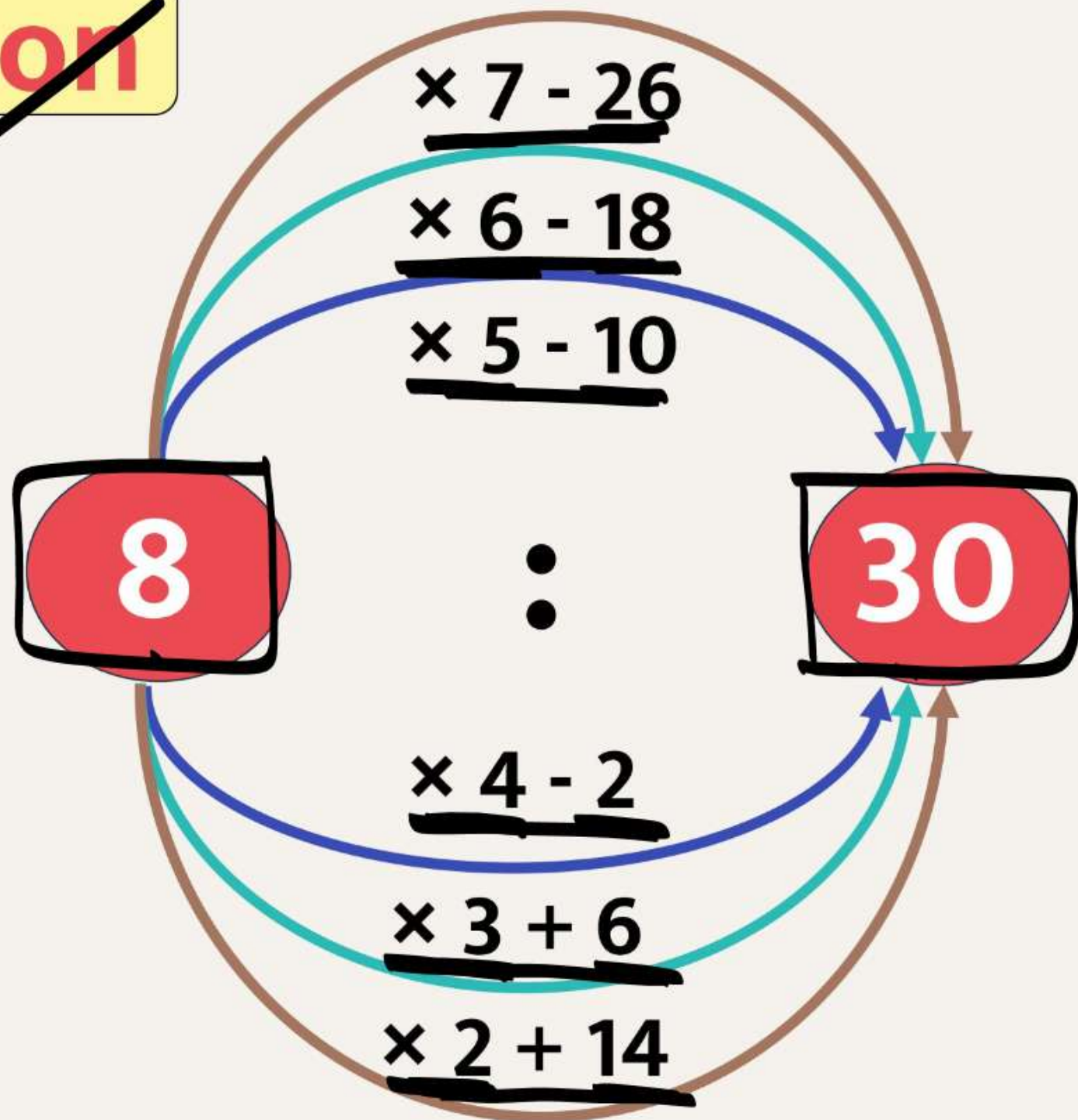
Basic & Concept



Topics based on Number based Reasoning

- Number Analogy
- Number Classification
- Number series
- Missing Number
- Numerical operations
- Alphanumeric Number Reasoning

Relation



$$\begin{array}{r} 8 \overline{) 30} \\ \underline{24} \\ 6 \end{array}$$

$$\begin{array}{r} 8 \overline{) 30} \\ \underline{16} \\ 14 \\ \underline{8} \\ 6 \end{array}$$

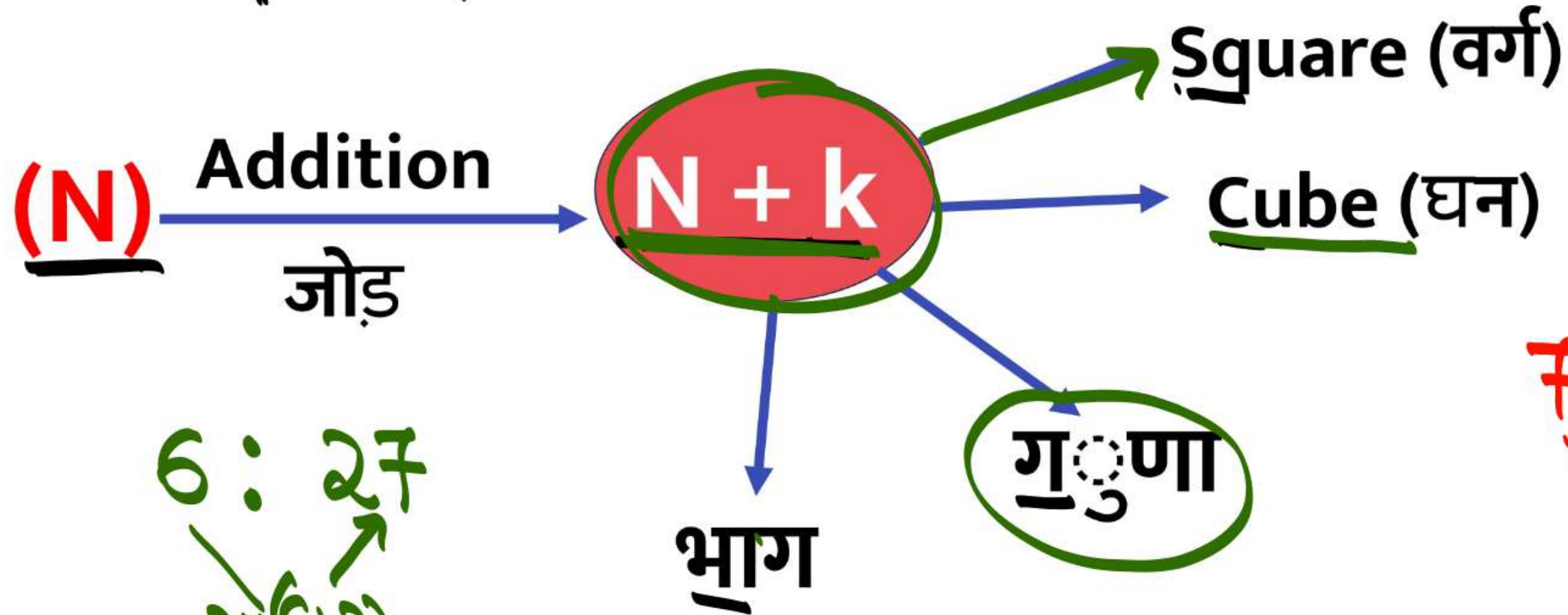
$$\begin{array}{r} 8 \overline{) 30} \\ \underline{8} \\ 22 \end{array}$$



Relation

Number $\rightarrow (N)$

(1) Addition / Subtraction (जोड़ / घटाव)



$$6 : 27$$

$\swarrow \nearrow$

$$3 \times (6+3)$$

$$14 : 4$$

$\swarrow \nearrow$

$$(14+2)/4$$

$$3 : 8$$

$\swarrow \nearrow$

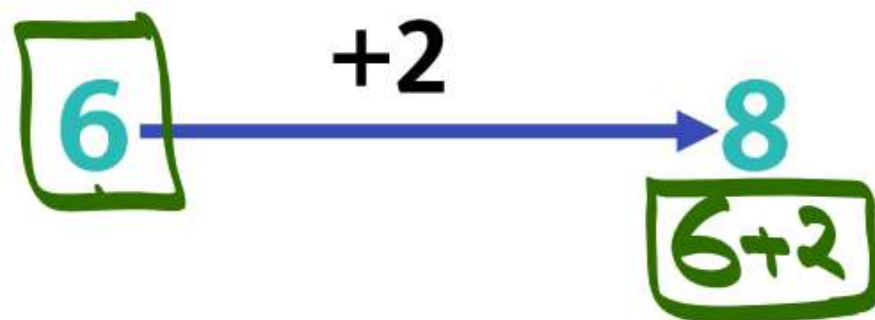
$$(3-1)^3$$

$$7 : 81$$

$\swarrow \nearrow$

$$(7+2)^2$$

Example



$$8^2 = 64$$

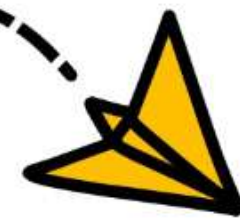
$$(8)^2 + 2 = 66$$

$$8^3 = 512$$

$$(8)^3 + 10 = 522$$

$$8 \times 7 + 2 = 58$$

$$8 \times 8 - 8 = 56$$



Number $\rightarrow (N)$

(N) Substraction
घटाव

N - k

Square (वर्ग)

Cube (घन)

भाग

गुणा

Multiply



Example

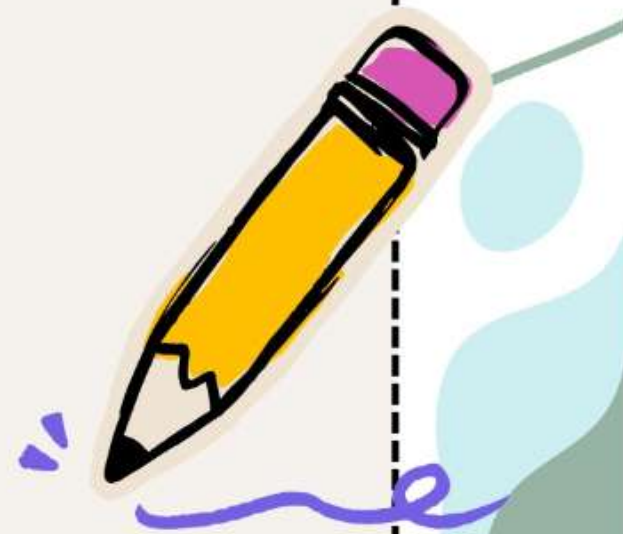
$$\boxed{16} \xrightarrow{-4} \underline{12}$$

$$12^2 = 144$$
$$\underline{(12)^2 + 14} = 158$$

$$12^3 = 1728$$
$$\underline{(12)^3 - 16} = 1712$$

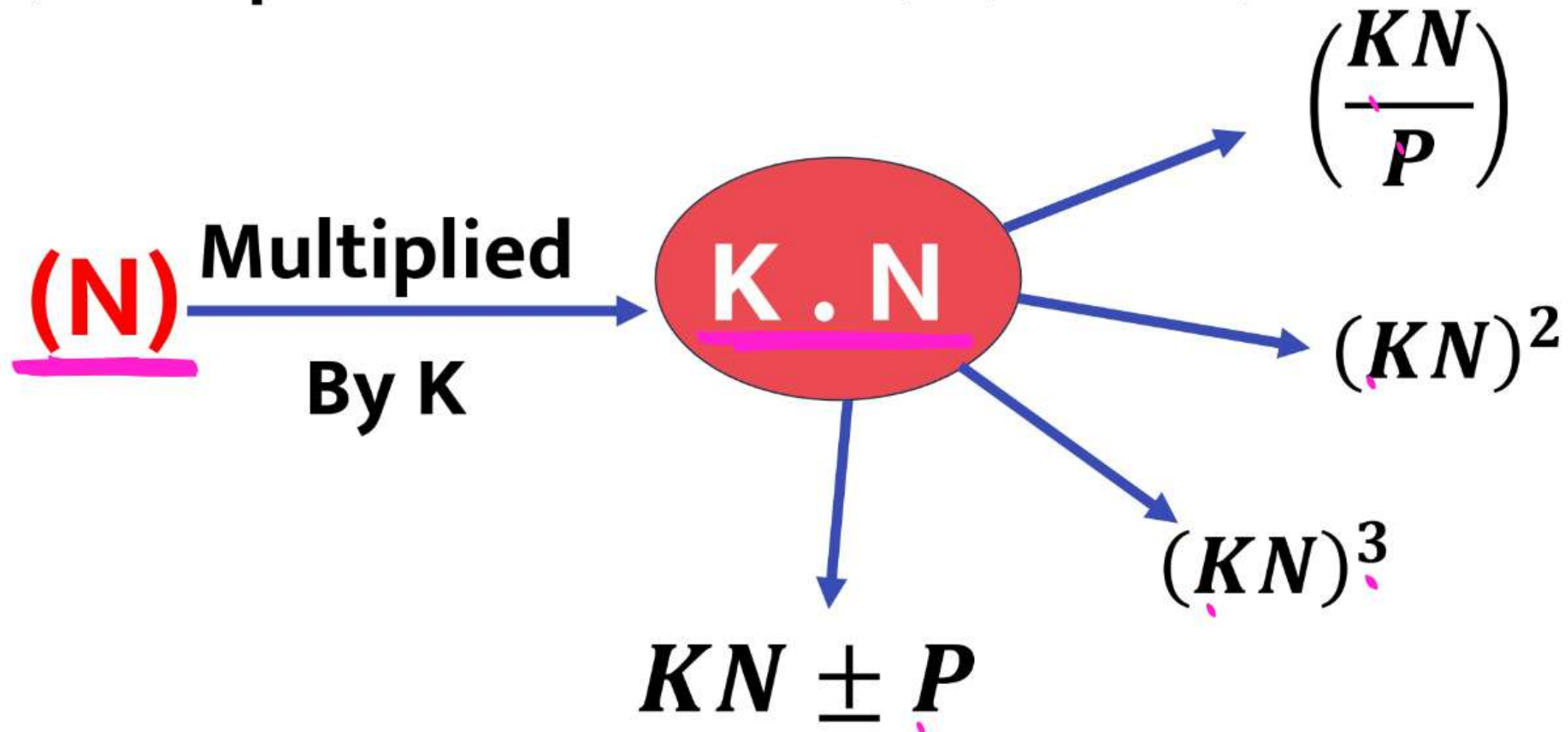
$$\underline{12 \times 12 + 2} = \underline{146}$$

$$\underline{\underline{(12)^2 + 4}}_{4} = 37$$



Number $\rightarrow (N)$

(2) Multiplication / division (जोड़ / घटाव)





Example



12 $\xrightarrow[\text{By 3}]{\text{Multiplied}}$ $12 \times 3 =$ 36

$(36)^2 = 1296$

$(36)^3 = 46656$

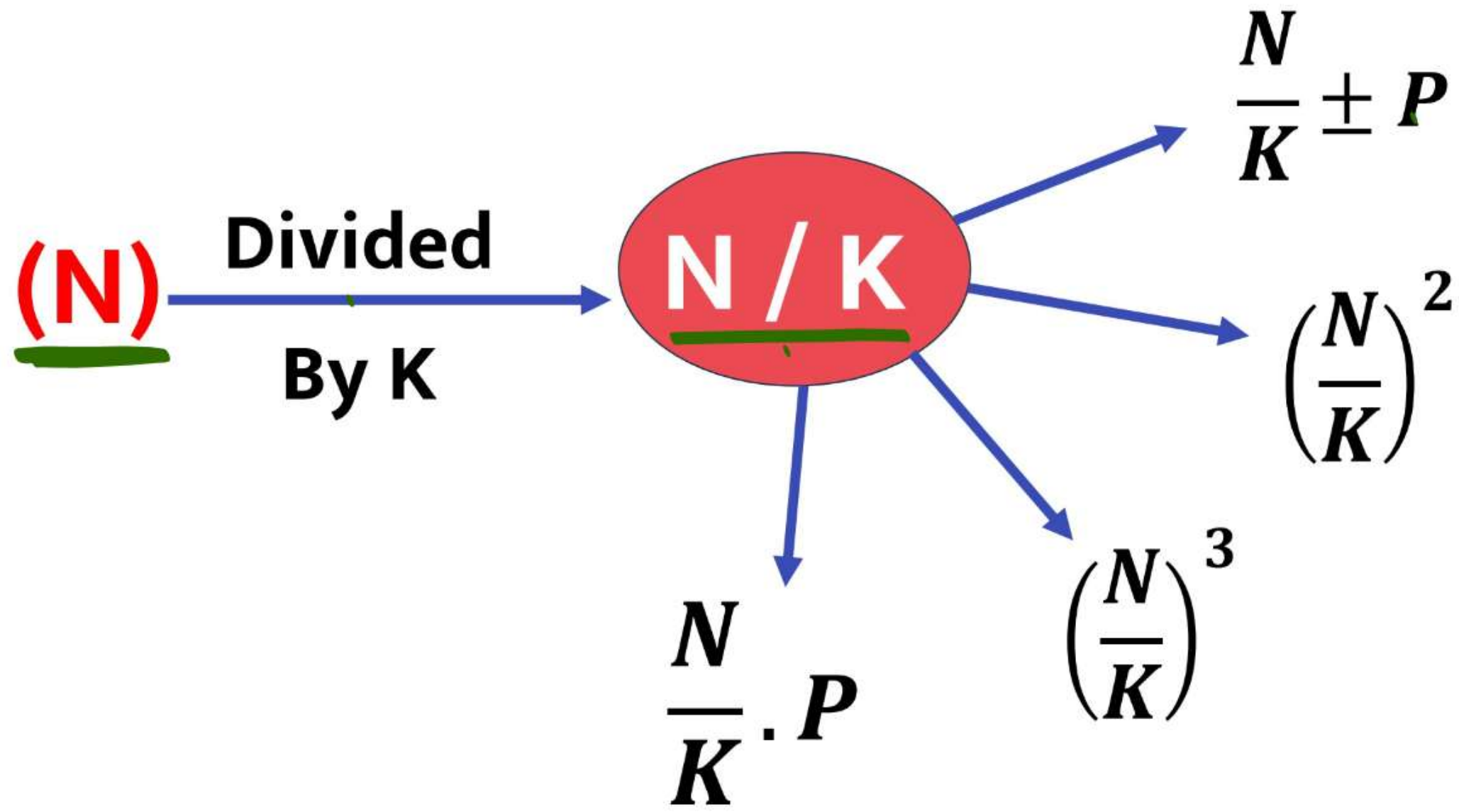
$\left(\frac{36}{2}\right)^2 =$ 324

$36 + 12 = 48$



Number $\rightarrow (N)$

Thought process



Handwritten example:

$$15 : 7 \rightarrow \frac{15}{7} = 5 + 2$$



Example

144 $\xrightarrow[\text{By 3}]{\text{Divided}}$ $144/12 = \underline{12}$

$12^2 = 144$
 $(\underline{12})^2 + \underline{10} = \underline{154}$

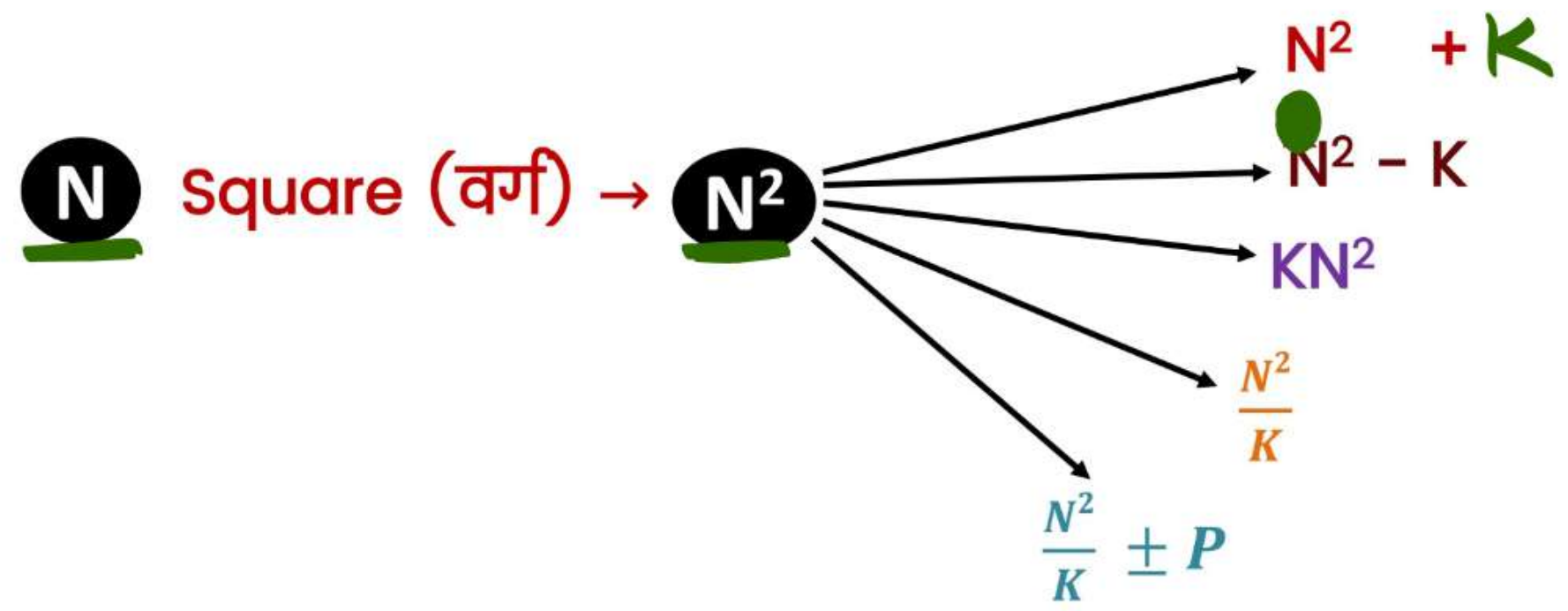
$(\underline{12})^3 = \underline{1728}$

$\underline{12} + \underline{4} = \underline{16}$

$\underline{12} - \underline{4} = \underline{8}$

$\underline{12} \times \underline{5} = \underline{60}$





EXAMPLE : -



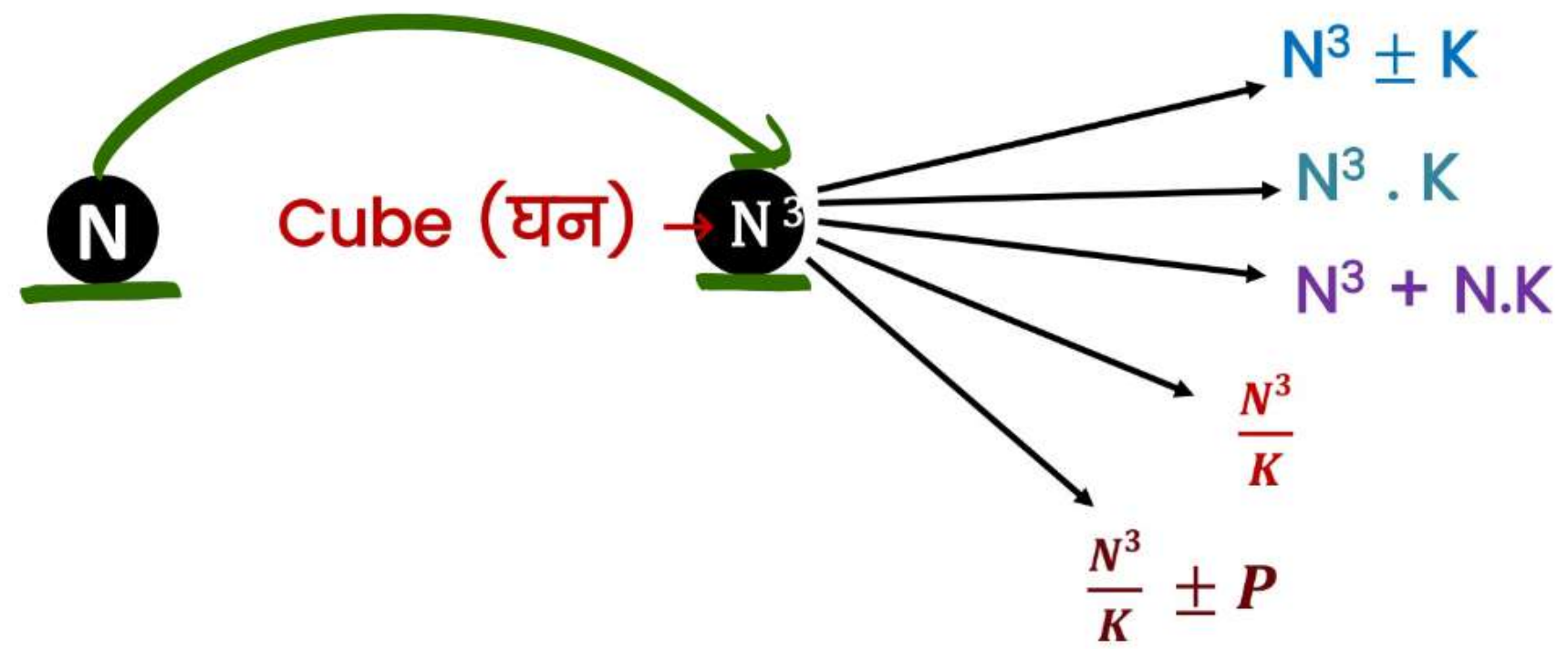
$$196 + 12 = 208$$

$$196 - 11 = 185$$

$$196 \times 4 = 784$$

$$196 \div 4 = 49$$

$$\frac{196}{4} + 10 = 59$$



EXAMPLE : -



14

Cube (घन) → 2744

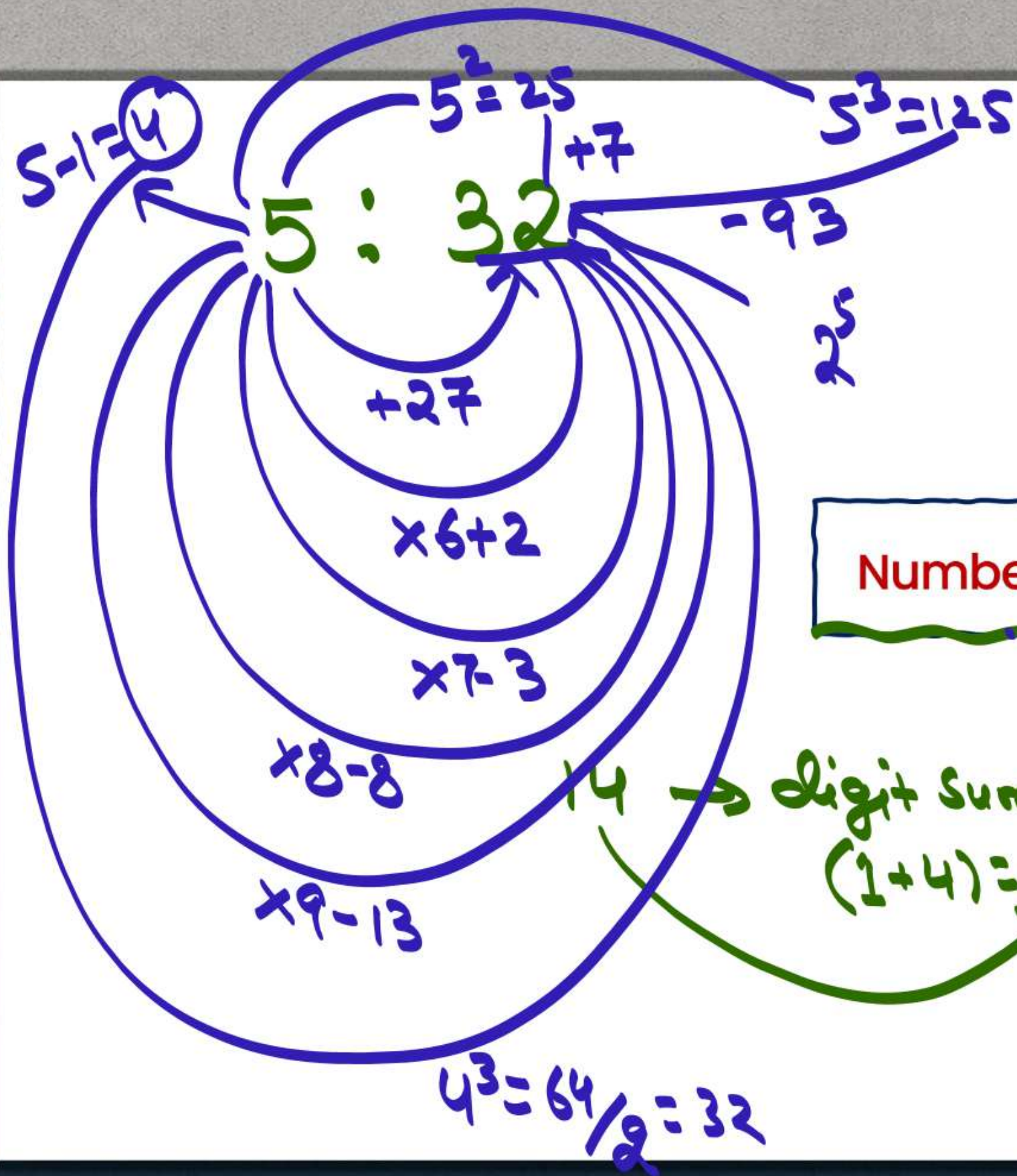
$$2744 + 16 = 2760$$

$$2744 - 16 = 2728$$

$$2744 \times 4 = 10976$$

$$2744 \div 4 = 686$$

$$\frac{2744}{4} + 8 = 694$$

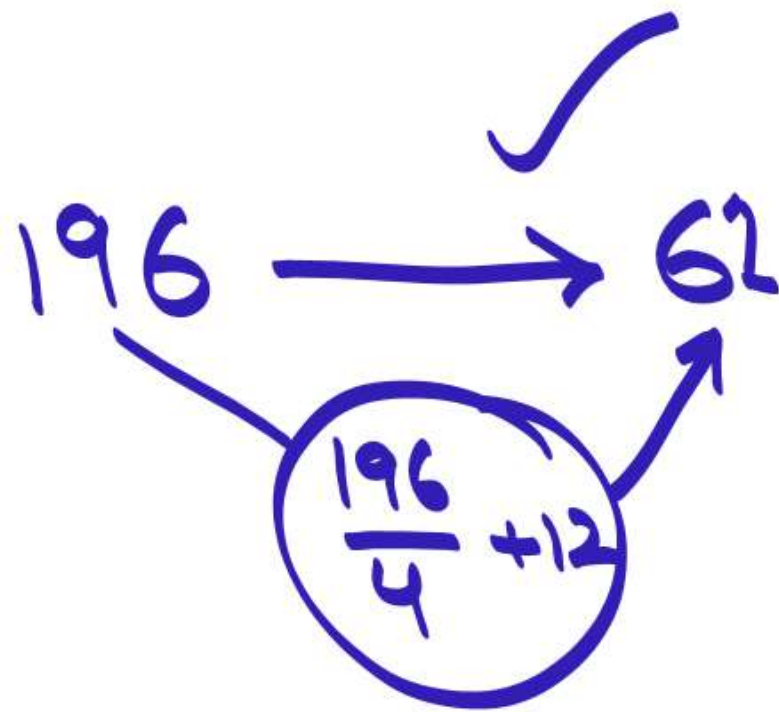


Number (N)

- $\frac{N}{K} \pm P$
- $\left(\frac{N}{K}\right)^2$
- Sum Of Digits Of N.



EXAMPLE : -



$$\begin{array}{l} \underline{196} \left\{ \begin{array}{l} \frac{196}{4} + 12 = 61 \\ \left(\frac{196}{7}\right)^2 = 784 \\ 1+9+6 = 7 \\ \text{(Digit sum)} \end{array} \right. \end{array}$$

SIMPLIFICATION

(सरलीकरण)

BODMAS

❖ Mathematical Operations →

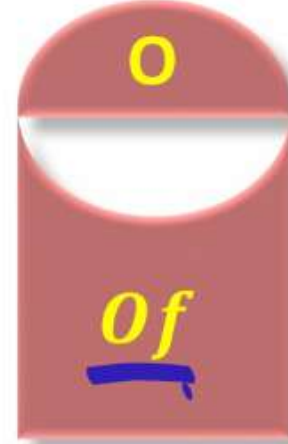


Vineculum
bar



Bracket

अन्दर वाले
Brackets वाले
बाहर वाले
को



Order

काइसी



Division

✓



multiplication

✓



Addition

✓



Subtraction

✓

★ Mod (%) → शेषफल ✓

Eg :- (i) $19 \text{ MOD } 6$ $\frac{19}{6} = 1 \text{ शेष}$
Remainder

Eg :- (ii) $(3^2 - 4 + 5) \text{ MOD } 7$
 $(9 - 4 + 5) \text{ MOD } 7$
 $10 \text{ MOD } 7$
 $\frac{10}{7} = 3(\text{शेष})$

RELATION BETWEEN 3 NUMBER

(A, B, C) → SET

(1) $C = K(a + b)$, ✓

(2) $b = (c - a) + c$

(3) $b = k(a \times c)$, $b = \frac{a \times c}{K}$, $b = \frac{a^2 \times c}{K}$

(4) $b = ac + k$

(5) $c = a^2 \pm \left(\frac{b}{k}\right)^2$

(6) $c = \frac{a+b}{K}$,

(7) $c = \frac{a}{b} \times k$,

(8) $b = \sqrt{a + c}$

(9) $a - b = b - c = \text{Constant}$

$C = K(a + b) \pm P$, $C = K(a - b)$,

Ex.)

a, b, c से + में
(5, 7, 36) (3, 7, 30)

$3(5+7) = 36$ | $3(3+7) = 30$
 $k(a+b) = c$

(10) $c = (a + b)^2 \pm P$

(11) $c = \frac{a}{b}, \quad c = \left(\frac{a}{b}\right)^2$

(12) $c = a^2 + b, \quad c = a^2 + b^2, \quad c = (a - b)^2$

(13) $c = \frac{a}{b} \pm P$

(14) $c = \frac{a - b}{k}$

(15) $c = \frac{a}{k} + \frac{b}{P}, \quad c = ka + Pb$

(16) $c = a \times b - \frac{a}{b}$

(17) $c = a^3 - b^3, \quad c = k(a^3 - b^3)$

(18) $c = a^2 - b^2, \quad c = k(a^2 - b^2), \quad c = (a^2 - b^2) \pm P$

(19) $c = \frac{a^2 - b^2}{k}$

(20)

$$c = a^2 + b^2,$$

$$c = k(a^2 + b^2),$$

$$c = \frac{a^2 + b^2}{k}$$

(21)

$$c = a^2 + b^2 + (a + b)$$

$$c = a^2 + b^2 + ab$$

(22)

$$c = \left(\frac{a}{k}\right)^2 \pm \left(\frac{b}{p}\right)^2$$

(23)

$$c = \sqrt{ab} \checkmark$$

(24)

$$c = \frac{a}{b} + a,$$

$$c = \frac{a}{b} + a^2,$$

Q $\begin{matrix} a, b, c \\ (9, 4, 6) \end{matrix}$ $\begin{matrix} (6, 6, 6) \end{matrix}$

$\sqrt{9 \times 4} = 6$ $(20, 5, ?)$

$\sqrt{6 \times 6} = 6$ $\sqrt{20 \times 5} = 10 \checkmark$

Ex. $\begin{matrix} a & b & c \\ (2, 3, 13) \end{matrix}$ $\begin{matrix} (4, 7, 65) \end{matrix}$

$\begin{matrix} (7, 2, ?) \end{matrix}$ $7^2 + 2^2$
 $49 + 4 = 53 \checkmark$

$2^2 + 3^2 = 13$ $4^2 + 7^2 = 65$
 $4 + 9 = 13$ $16 + 49$

❖ MORE THAN 3 NUMBERS

□ (A, B, C, D, E)

□ A - B - C - D

□ A : B : C : D

A^2



A



A^3



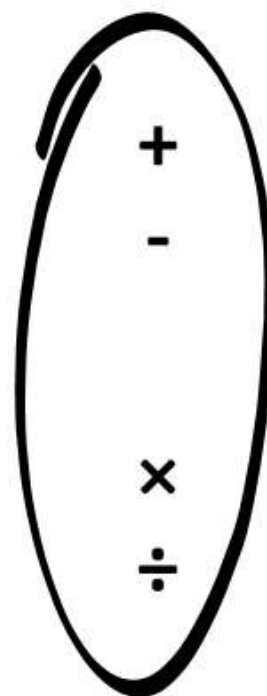
B^2



B



B^3



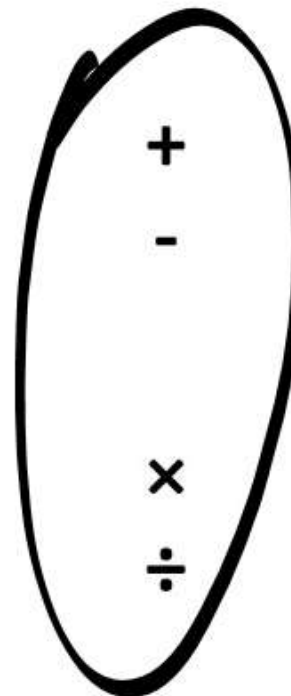
C^2



C



C^3



D^2



D



D^3

*Thank
you*

The background is a solid light beige color. It is decorated with several faint, light grey circular floral motifs, each composed of small dots arranged in a ring. Scattered throughout the background are small, colorful dots in shades of green, yellow, and pink. There are also a few small white star-like shapes. Two dark green leafy branches are positioned on either side of the text, one extending from the top right and the other from the bottom left, framing the words.