Binary system

→ द्विआधारी पद्धति (0, 1)

Base → 2

17 को द्विआधारी बदलें।

2	17	1
2	8	0
2	4	0
2	2	0
	1	

$(10001)_2$

II-method

32	16	8	4	2	1
	1	0	0	0	1

$(10001)_2$

$(47)_{10} = (\quad)_2$

64	32	16	8	4	2	1
X	1	0	1	1	1	1

$(1011\,11)_2$

$(1000100)_2$

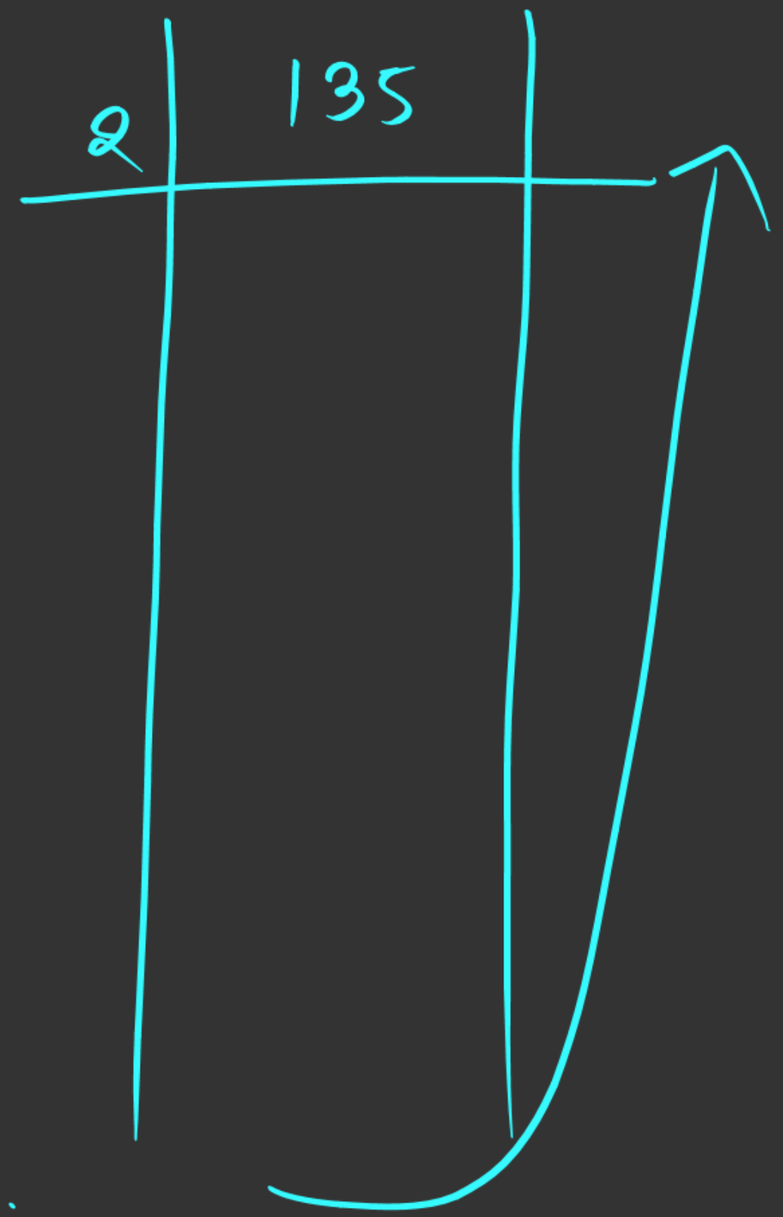
$(68)_{10} = (\quad)_2$

64	32	16	8	4	2	1
1	0	0	0	1	0	0

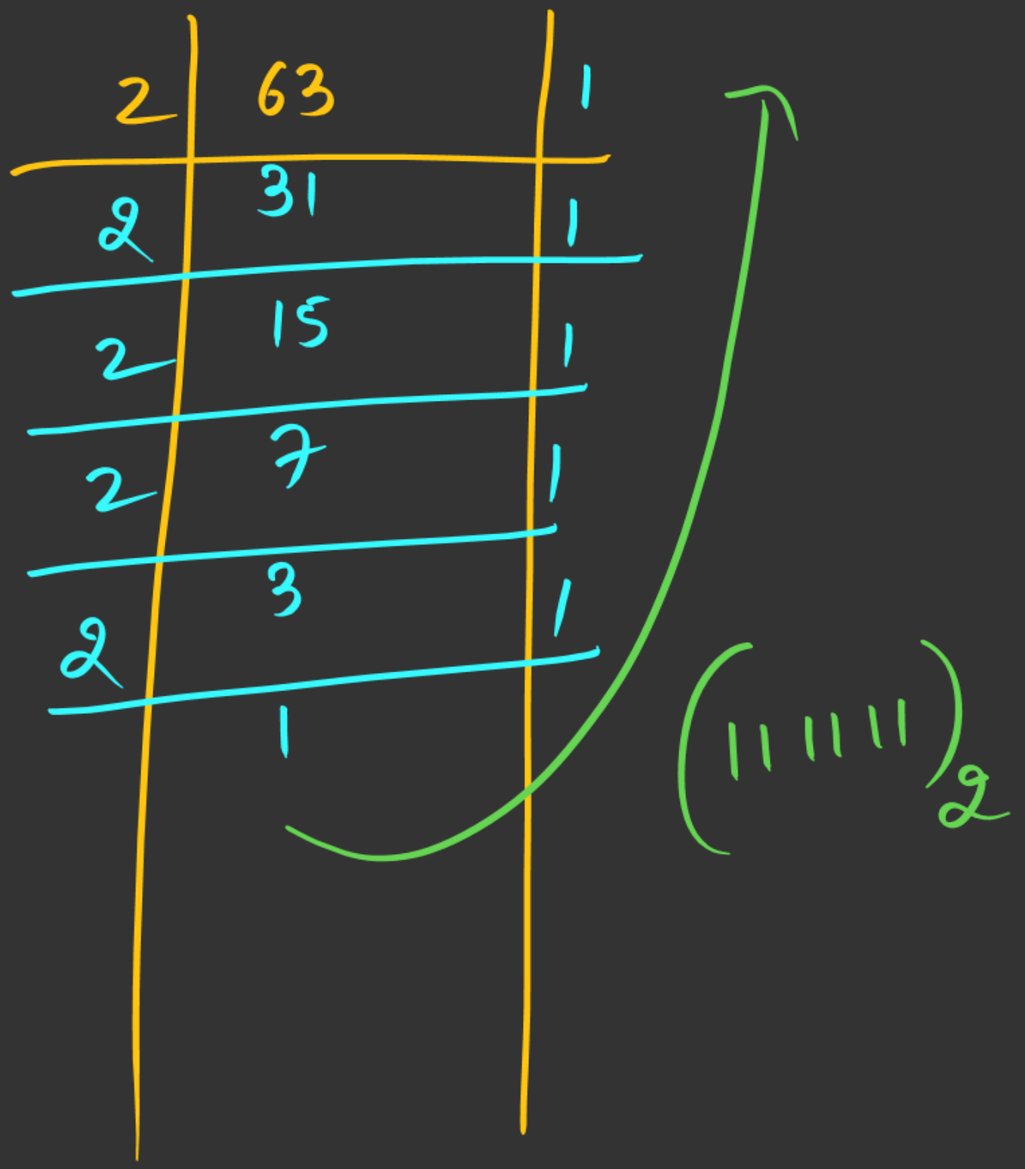
$(135)_{10} = (\quad)_2$

1	0	0	0	0	1	1	1
128	64	32	16	8	4	2	1

$(10000111)_2$



$(63)_{10} = (\quad)_2$



Binary to Decimal

$(1011)_2 = (\quad)_{10}$

$1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

$8 + 0 + 2 + 1 = 11$

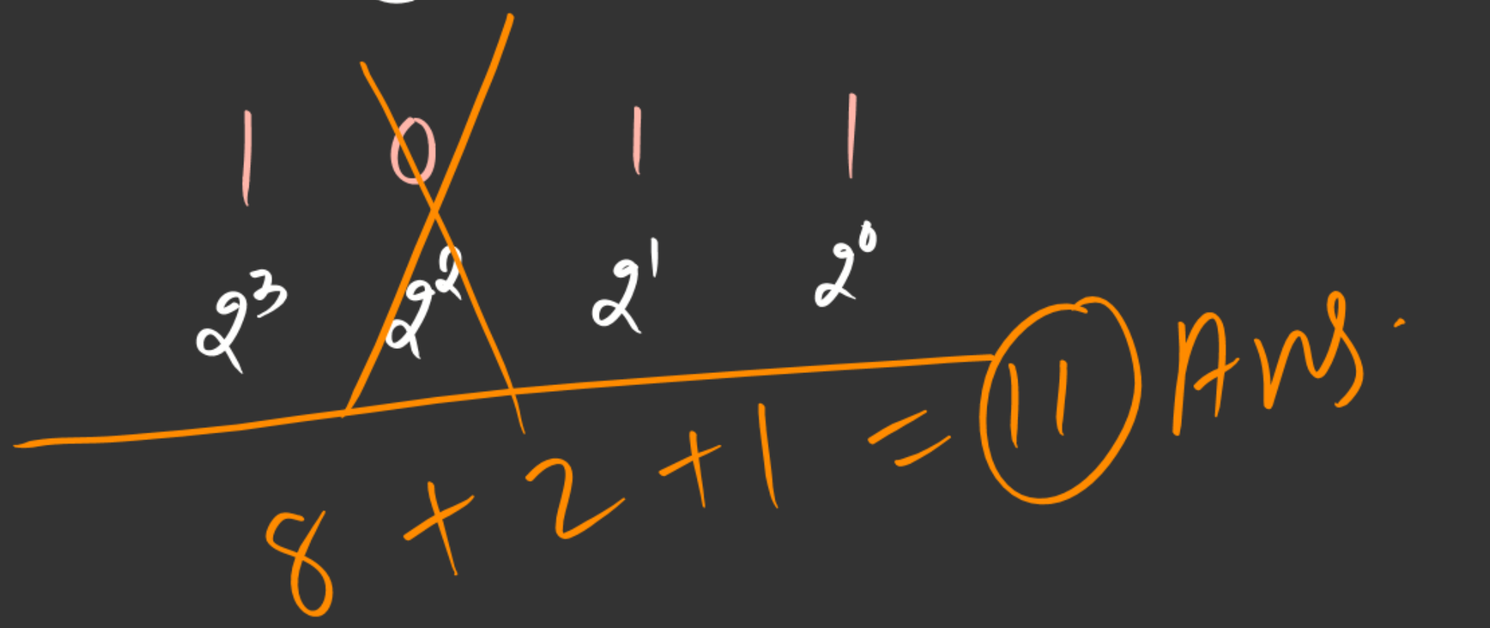
$x^0 = 1$

$x \neq 0$

$0^0 \rightarrow$ U.D

Binary to Decimal

$(1011)_2 = (\quad)_{10}$



$x^0 = 1$

$x \neq 0$

$0^0 \rightarrow$ U.D

16	8	4	2	1
	1	~~0~~	1	1

1011

$8 + 2 + 1 = 11$

$(11010)_2 = (\quad)_{10}$

16	8	4	2	1
1	1	~~0~~	1	~~0~~

$16 + 8 + 2 = 26$

$(111011)_2 = (\quad)_{10}$

1110 11

128	64	32	16	8	4	2	1
		1	1	1	0	1	1

$32+16+8+2+1 = 59$

$(1021)_3 = (\quad)_{10}$

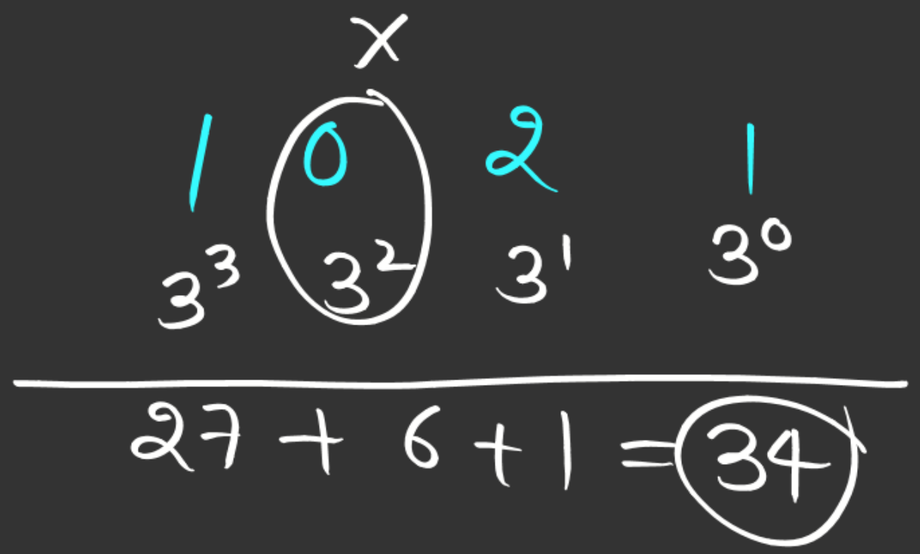
$(121)_3 = (\quad)_{10}$

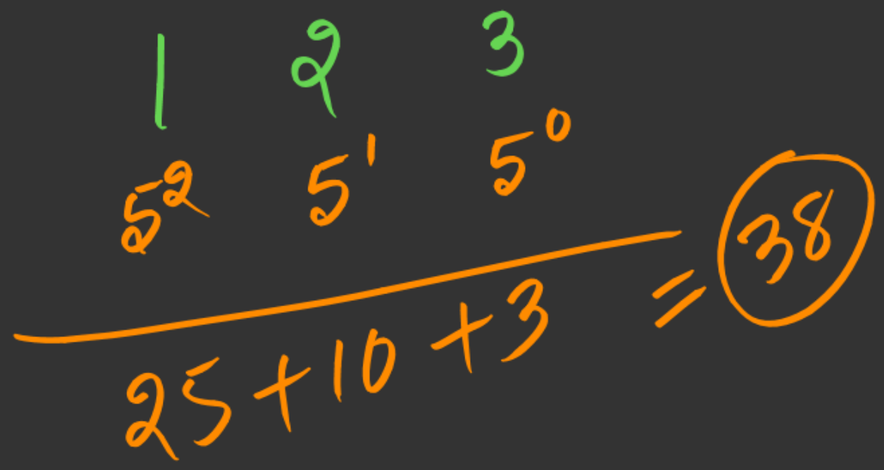
3^2	3^1	3^0
1	2	1

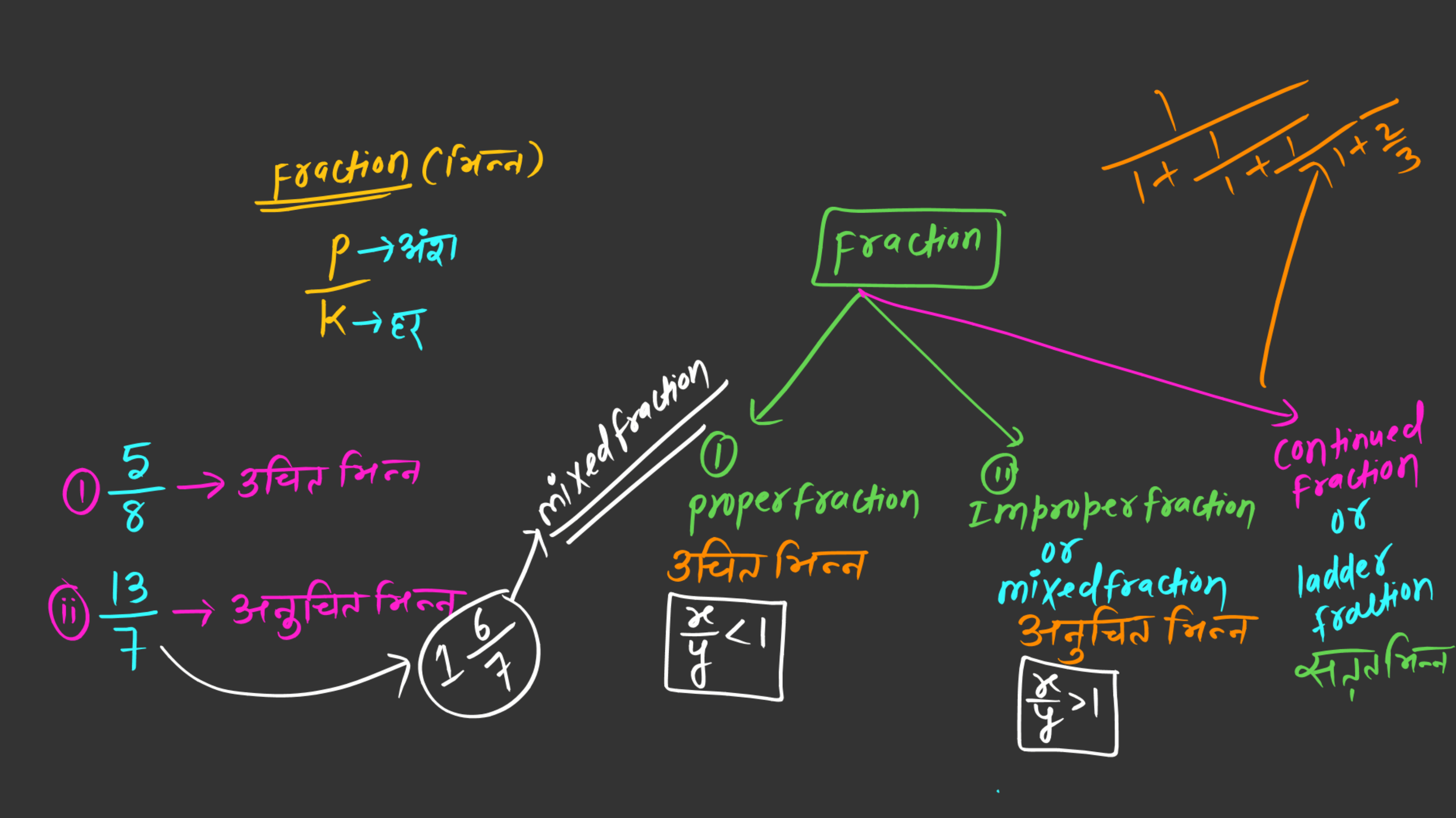
$9+6+1 = 16$

$(1021)_3 \longrightarrow (\quad)_{10}$

$(123)_5 \longrightarrow (\quad)_{10}$






Fraction (भिन्न)
p → अंश
k → हर
Fraction
(i) proper fraction
उचित भिन्न
$\frac{x}{y} < 1$
(ii) Improper fraction
or
mixed fraction
अनुचित भिन्न
$\frac{x}{y} > 1$
Continued fraction
or
ladder fraction
सतत भिन्न
$1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{2}{3}}}}$
(i) $\frac{5}{8}$ → उचित भिन्न
(ii) $\frac{13}{7}$ → अनुचित भिन्न
$1\frac{6}{7}$
mixed fraction

भाजक) भाज्य (भागफल

शेषफल

भाज्य = भाजक × भागफल + शेषफल

$1\frac{6}{7}$ → पूर्णांक (+)

$1 + \frac{6}{7}$

$5 + 11\frac{7}{9}$

$16\frac{7}{9}$

$\frac{13}{7} \rightarrow 1\frac{6}{7}$

भाजक 7) भाज्य 13 (भागफल 1

7

6 शेषफल

भागफल शेषफल / भाजक

$1\frac{6}{7}$

$3\frac{1}{7} + 5\frac{3}{7} + 8\frac{4}{7}$

$16 + \left[\frac{1}{7} + \frac{3}{7} + \frac{4}{7}\right]$

$16 + \left[\frac{1+3+4}{7}\right]$

$16 + 1 + \frac{1}{7}$

$17\frac{1}{7}$

$12\frac{3}{5} + 17\frac{7}{10} - 3\frac{8}{15}$

$26 + \left[\frac{3}{5} + \frac{7}{10} - \frac{8}{15}\right]$

$26 + \left[\frac{18+21-16}{30}\right]$

$26 + \left[\frac{23}{30}\right]$ $26 \times \frac{23}{30}$

$26\frac{23}{30}$