LCM

Type-1

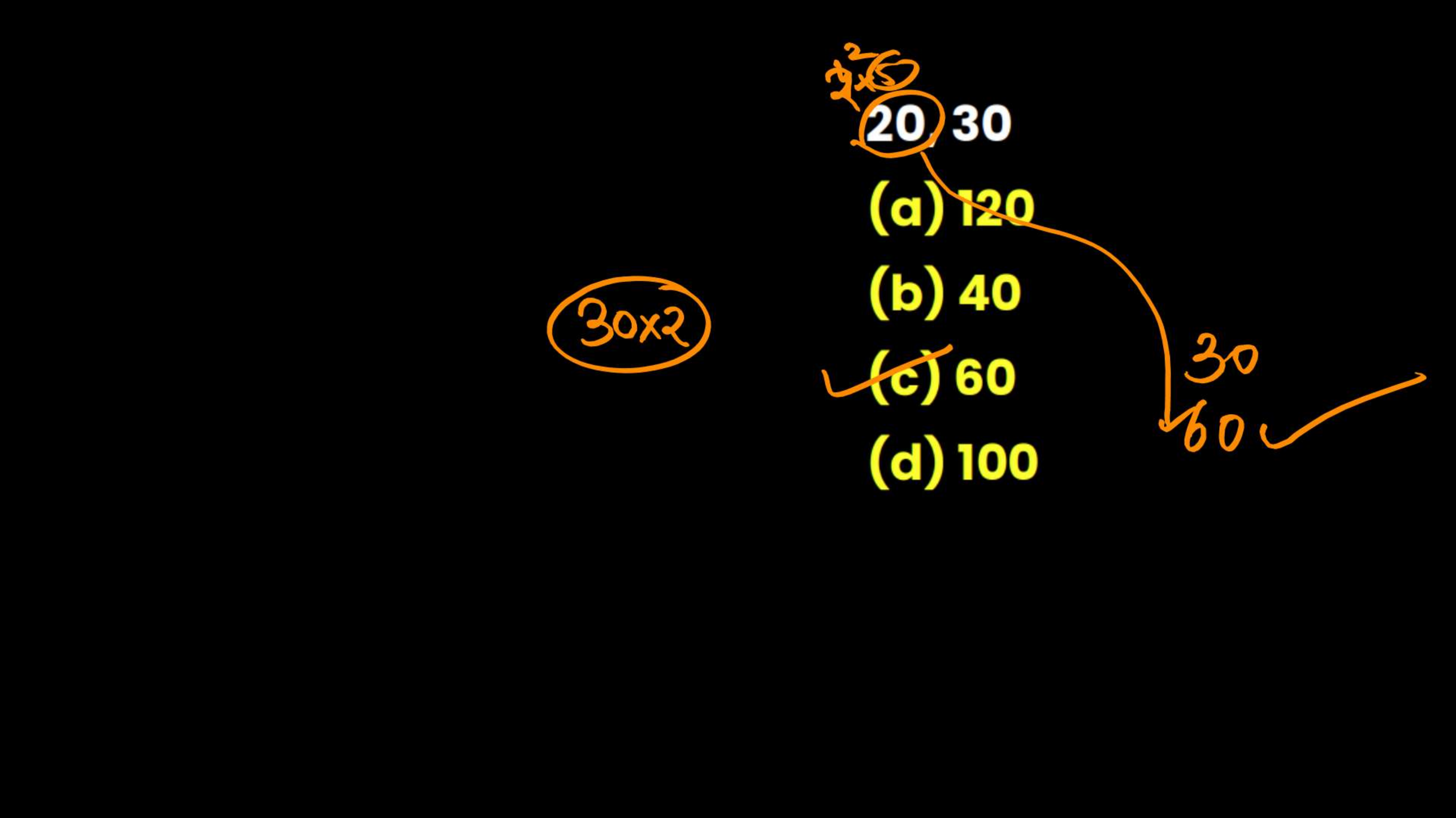
2, 4, 16

16

6, 18, 24

24×3

72


20, 30
(a) 120
(b) 40
(c) 60
(d) 100
30x2
30
60

40, 70

(a) 420

(b) 240

(c) 280

(d) 210

45, 30, 60

(a) 240

(b) 120

(c) 90

(d) 180

18, 30, 60

(a) 90

(b) 120

(c) 60

(d) 180

36, 48, 72 +2

(a) 144

(b) 216

(c) 360

(d) 240

24,30,36 x5x2

(a) 360

(b) 120

(c) 240

(d) 180

$3^2 \times$ 40, 36, 24

(a) 720

(b) 360

(c) 320

(d) 600

12, 18, 36

(a) 36

(b) 18

(c) 72

(d) 180

21, 42, 63

(a) 126

(b) 166

(c) 136

(d) 176

72, 90, 180 x 2

(a) 180

(b) 360

(c) 720

(d) 900

$\frac{p}{q}$ lowest form

$$\left(\frac{p}{q}\right)_{LCM} = \frac{LCM}{HCF}$$

Coprime

a, b, c HCF $= 1$ LCM $= abc$

7 9 8

2 4 3

(a) $\frac{72}{7}$

(b) 504

(c) $\frac{504}{12}$

(d) 252

$\frac{504}{1}$

(B)

$\frac{9}{2}, \frac{9}{4}, 3$

(a) 3

(b) $\frac{9}{4}$

(c) 9

(d) $\frac{9}{2}$

$\frac{9}{1}$

$\frac{1}{2}, \frac{3}{4}, 1$

(a) $\frac{3}{4}$

$\frac{3}{1}$

(b) 3

(c) $\frac{3}{2}$

(d) 9

24, 72, 36

(a) 72

(b) 144

(c) 360

(d) 180

6, 5, 7.5

(a) 60

(b) 12

(c) 30

(d) 15

5,20,36

(a) 180

(b) 300

(c) 120

(d) 144

5, 60, ~~7.5~~ $\frac{15}{2}$

(a) 60

(b) 80

(c) 300

(d) 120

$\frac{60}{1}$

24, $\frac{120}{7}$

(a) 168

(b) 100

(c) 120

(d) 140

$\frac{120}{1}$

0.3, 0.4, 0.6

(a) 1.2

(b) 0.12

(c) 12

(d) 1.02

$\sqrt{3}, 2\sqrt{3}, 4$

(a) $\sqrt{3}$

(b) $4\sqrt{3}$

(c) $2\sqrt{3}$

(d) 12

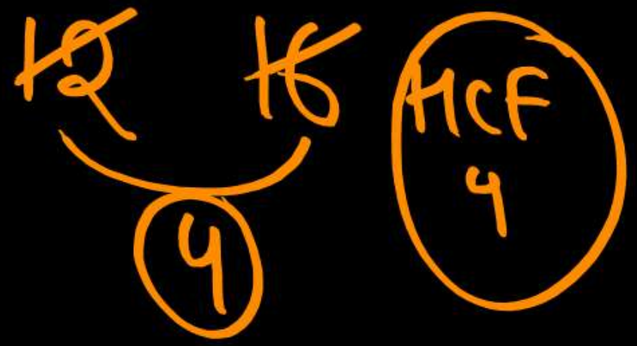
$4\sqrt{3}$

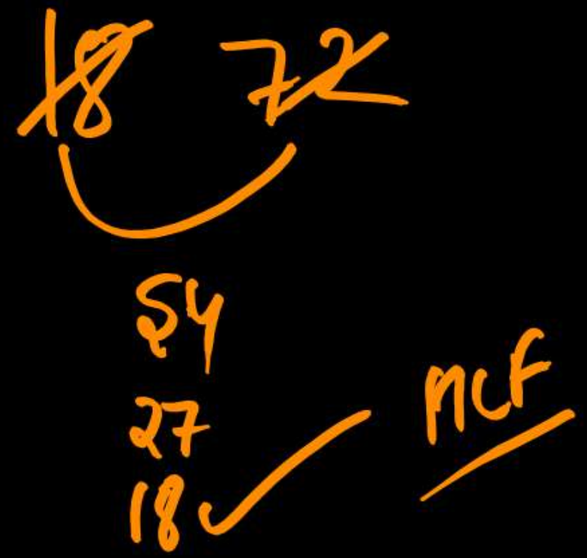
B

HCF

Type-1

Max. case में option से calculate करें





7, 21

(a) 21

(b) 7

(c) 3.5

(d) 147

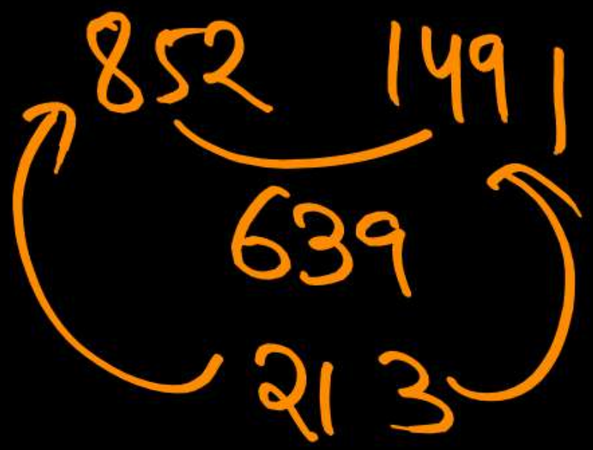
852, 1491

(a) 852

(b) 1491

(c) 213

(d) 217



C

128, 240

(a) 128

(b) 16

(c) 240

(d) 120

B

128 240

112

56

28 16

14

945, 2475

(a) 45

(b) 105

(c) 99

(d) 75

A

126, 144, 162

(a) 12

(b) 14

(c) 18

(d) 16

254

1397, 1651, 2032

(a) 127

(b) 123

(c) 137

(d) 129

192, 288, 336

(a) 48

(b) 47

(c) 49

(d) 192

A

$\left(\frac{P}{Q}\right)_{HCF} = \frac{HCF}{LCM}$

$\frac{175}{100} \quad \frac{560}{100} \quad \frac{700}{100}$

$\frac{35}{100}$

1.75, 5.60, 7.00

(a) 0.35

(b) 0.25

(c) 7

(d) 5.6

0.48, 0.72, 0.108

(a) 0.12

(b) 0.012

(c) 1.2

(d) 0.48

480 720 108

$\frac{480}{1000}$

R

0.800, 0.125, 0.625, 0.500

(a) 0.25

(b) 0.0025

(c) 2.5

(d) 0.025

800 125 625 500

$\frac{25}{1000}$

0.63, 0.84, 1.05

(a) 0.21

(b) 2.1

(c) 0.021

(d) 0.63

63 84 105

$\frac{21}{100}$

$\frac{2}{3}, \frac{5}{8}, \frac{7}{9}, \frac{7}{12} \longrightarrow \frac{1}{72}$ (12 = 2×2×3)

(a) $\frac{5}{72}$

(b) $\frac{7}{72}$

(c) $\frac{1}{72}$

(d) $\frac{1}{12}$

$\frac{2}{3}, \frac{8}{9}, \frac{16}{81}, \frac{10}{27}$ $\frac{2}{81}$

(a) $\frac{1}{81}$

(b) $\frac{16}{81}$

(c) $\frac{10}{81}$

(d) $\frac{2}{81}$

$\frac{7}{2}, \frac{21}{8}, \frac{98}{13}, \frac{154}{3}$

$\frac{7}{78}$

(a) $\frac{7}{78}$

(b) $\frac{154}{78}$

(c) $\frac{7}{13}$

(d) $\frac{21}{13}$

HCF छोटी से बड़ा ✗

LCM बड़ी से छोटा ✗

$$\frac{852}{7}, \frac{1491}{14}, \frac{1065}{2}$$

213

2

$$\frac{213}{14}$$

(a) $\frac{13}{14}$

(b) $\frac{27}{213}$

(c) $\frac{14}{213}$

(d) $\frac{213}{14}$

$\frac{8}{3}, \frac{12}{7}, \frac{64}{21}$

$\frac{4}{21}$

(a) $\frac{4}{21}$

(b) $\frac{8}{21}$

(c) $\frac{21}{4}$

(d) $\frac{21}{8}$

$4\frac{1}{2}, \frac{6}{5}, 10\frac{1}{2}$

$\frac{9}{2}, \frac{6}{5}, \frac{21}{2}$

$\frac{3}{10}$

(a) $\frac{3}{10}$

(b) $\frac{3}{2}$

(c) $\frac{10}{3}$

(d) $\frac{2}{3}$

$2\frac{1}{2}, \; 3\frac{1}{3}, \; 3\frac{3}{4}$

$\frac{5}{2}, \frac{10}{3}, \frac{15}{4}$

$\frac{5}{12}$

(a) $\frac{5}{12}$

(b) $\frac{12}{5}$

(c) $\frac{10}{3}$

(d) $\frac{5}{2}$

$9\frac{1}{11}$, $19\frac{2}{22}$

$\frac{100}{11}, \frac{210}{11}$

$\frac{10}{11}$

(a) $\frac{11}{50}$

(b) $\frac{50}{11}$

(c) $\frac{10}{11}$

(d) $\frac{1}{11}$

$2\frac{1}{7}, 7\frac{1}{7}, 14\frac{2}{7}$

$\frac{15}{7}, \frac{50}{7}, \frac{100}{7}$

(a) $\frac{6}{7}$

(b) $\frac{7}{6}$

(c) $\frac{7}{5}$

(d) $\frac{5}{7}$

$12\frac{1}{2},\ 8\frac{1}{3},\ 16\frac{2}{3}$

$\frac{25}{2}, \frac{25}{3}, \frac{50}{3}$

$\frac{25}{6}$

(a) $\frac{25}{6}$

(b) $\frac{6}{25}$

(c) $\frac{3}{25}$

(d) $\frac{12}{25}$

$5\frac{1}{5},\ 7\frac{3}{7},\ 3\frac{1}{4}$

$\frac{26}{5}, \frac{52}{7}, \frac{13}{4}$

$\frac{13}{140}$

(a) $\frac{140}{13}$

(b) $\frac{120}{7}$

(c) $\frac{7}{120}$

✓ (d) $\frac{13}{140}$

$4\frac{1}{4}, 4\frac{6}{7}, 7\frac{5}{9}$

(a) $\frac{17}{9}$

(b) $\frac{17}{28}$

(c) $\frac{17}{252}$

(d) $\frac{252}{17}$

$\frac{17}{4}, \frac{34}{7}, \frac{68}{9}$

$\frac{17}{252}$

$14\frac{2}{7}, 16\frac{2}{3}, \frac{1}{4}$

(a) $\frac{100}{7}$

(b) $\frac{1}{84}$

(c) 84

(d) $\frac{9}{8.4}$

$\frac{100}{7}, \frac{50}{3}, \frac{1}{4}$

$\frac{1}{84}$

$33\frac{1}{3},\ 66\frac{2}{3},\ 6\frac{1}{4}$

(a) $\frac{12}{25}$

$\frac{100}{3}, \frac{200}{3}, \frac{25}{4}$

(b) $\frac{25}{12}$

(c) $\frac{33}{13}$

$\frac{25}{12}$

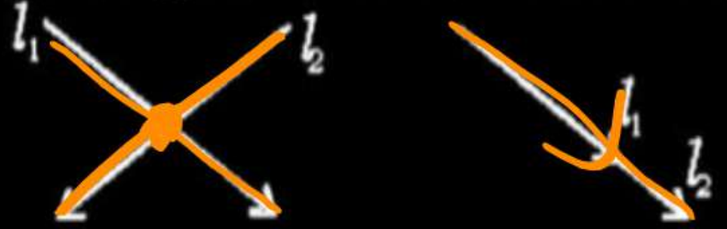
(d) $\frac{13}{33}$

Linear Equation (रैखिक समीकरण)

- **Linear Equation in Two Variables (दो चरों में रैखिक समीकरण)**

(A) Consistent System (संगत पद्धति): **Atleast one solution** (कम से कम एक हल)

Intersecting or Concurrent Lines)



Unique Solution

(एक हल)

Infinite Solution

(अनेक हल)

(B) Inconsistent System (असंगत पद्धति): Equation have no solution (कोई हल नहीं)

(Parallel lines)

l_1 ⟶

l_2 ⟶

No Solution

(कोई हल नहीं)

$$a_1x + b_1y + c_1 = 0$$
$$a_2x + b_2y + c_2 = 0$$

(1) If $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ **then unique solution.**

(2) If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ **then infinite solution.**

(3) If $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ **then no solution.**

1. For what value of k, the pair of equations $4x - 3y = 9$, $2x + ky = 11$ has no solution?

$$\frac{a_1}{a_2} = \frac{b_1}{b_2}$$

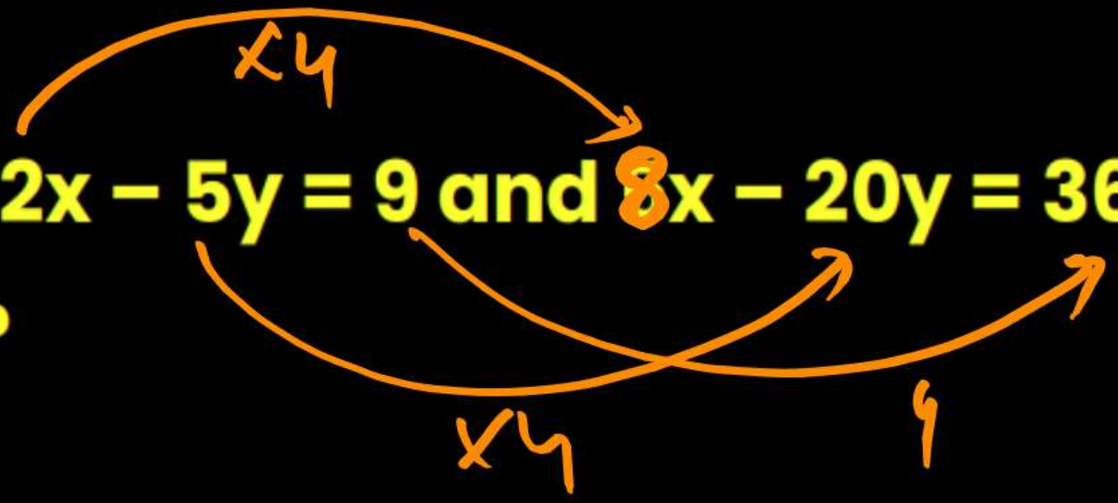
$$k = -\frac{3}{2}$$

2. For what value of k, the pair of equations $3x + 2y = -5$ and $x - ky = 2$ has a unique solution?

$$\frac{3}{1} = \frac{2}{-k}$$

$$k \neq -\frac{2}{3}$$

3. Equation $2x - 5y = 9$ and $8x - 20y = 36$ have ..... solution ?



$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

∞ infinite

4. Find the value of k if equation has no solution

$6x - 3y + 10 = 0$ and $2x - ky + 9 = 0$

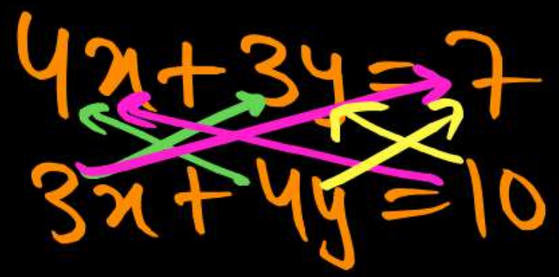
$k = +1$

$$\frac{a_1}{a_2} = \frac{b_1}{b_2}$$

$$\frac{a_1}{b_1} = \frac{a_2}{b_2}$$

- 2 Equations and 2 Variables का Hidden Method

$4x + 3y = 7$ and $3x + 4y = 10$



Right से Left

y छुपाओ $x = \frac{21-40}{3\times3-4\times4}$ //

x छुपाओ

Left से Right

$y = \frac{30-28}{3\times3-4\times4}$ //

- 2 Equations and 2 Variables का Hidden Method

2x + 4y = 10 and 3x + 2y = 11

$2x+4y=10$

$3x+2y=11$

$x = \frac{8}{8} = 1$ $\quad y = \frac{24}{8} = 3$

- **Cramer's Rule (3 Equations & 3 Variables)**

$$a_1x + b_1y + c_1z = d_1$$

$$a_2x + b_2y + c_2z = d_2$$

$$a_3x + b_3y + c_3z = d_3$$

$$x = \frac{\begin{vmatrix} d_1 & b_1 & c_1 \\ d_2 & b_2 & c_2 \\ d_3 & b_3 & c_3 \end{vmatrix}}{\begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}}$$

हमें सिर्फ Determinant लिखने हैं। सबसे पहली Row से Solve करेंगे। जिस term को लेंगे उसके आमने-सामने वाले Row-Column को ignore करेंगे। और solve करेंगे। यानि

$$x = \frac{d_1(b_2c_3 - c_2b_3) - b_1(d_2c_3 - c_2d_3) + c_1(b_3d_2 - b_2d_3)}{a_1(b_2c_3 - c_2b_3) - b_1(a_2c_3 - c_2a_3) + c_1(b_3a_2 - b_2a_3)}$$

$x - y + z = 4$, $x - 2y - 22 = 9$ and $2x + y + 3z = 1$

$x-y+z=4$ ✓

$x-2y-22=9$ —

$2x+y+3z=1$ ✓

$$x = \frac{\begin{vmatrix} 4 & -1 & +1 \\ 9 & -2 & -2 \\ 1 & +1 & +3 \end{vmatrix}}{\begin{vmatrix} 1 & -1 & +1 \\ 1 & -2 & -2 \\ 2 & +1 & +3 \end{vmatrix}} = 4(\quad)-(-1)(\quad)+1(\quad)$$

$$y = \frac{\begin{vmatrix} 1 & 4 & +1 \\ 1 & 9 & -2 \\ 2 & 1 & +3 \end{vmatrix}}{\begin{vmatrix} 1 & -1 & +1 \\ 1 & -2 & -2 \\ 2 & +1 & +3 \end{vmatrix}}$$

$$z = \frac{\begin{vmatrix} 1 & -1 & 4 \\ 1 & -2 & 9 \\ 2 & +1 & 1 \end{vmatrix}}{\begin{vmatrix} 1 & -1 & +1 \\ 1 & -2 & -2 \\ 2 & +1 & +3 \end{vmatrix}}$$

$x - y + z = 4$, $x - 2y - 22 = 9$ and $2x + y + 3z = 1$

$$x = \frac{4(3x-2-(-2)x1) - (-1)(9x3-(1x-2)) + 1(+1x9-1x-2)}{1(3x-2-1x-2) - (-1)(3x1-2x-2) + 1(1x1-2x-2)}$$

$$= \frac{4(-4)+29+11}{-4+7+5}$$

$$x = \frac{24}{8} = 3$$

$$\begin{vmatrix} 1 & -1 & +1 \\ 9 & -2 & -2 \\ 1 & +1 & +3 \end{vmatrix} = 4(\quad) - (-1)(\quad) + 1(\quad)$$

$$\begin{vmatrix} 1 & -1 & +1 \\ 1 & -2 & -2 \\ 2 & +1 & +3 \end{vmatrix}$$