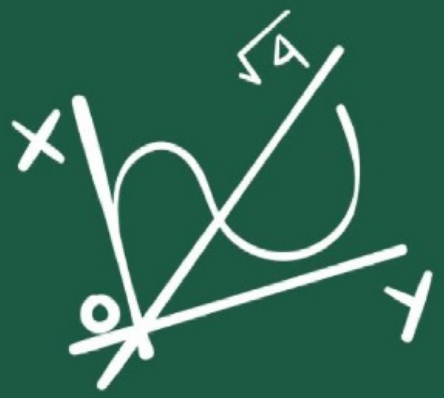
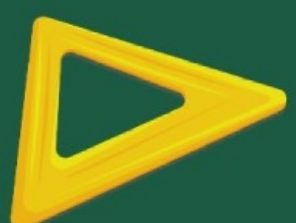
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Samagra Shiksha
সমগ্ৰ শিক্ষা

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দশম শ্ৰেণীৰ বাবে

গণিত

অধ্যায় - ৩

দুটা চলকত ৰৈখিক সমীকৰণৰ যোৰ

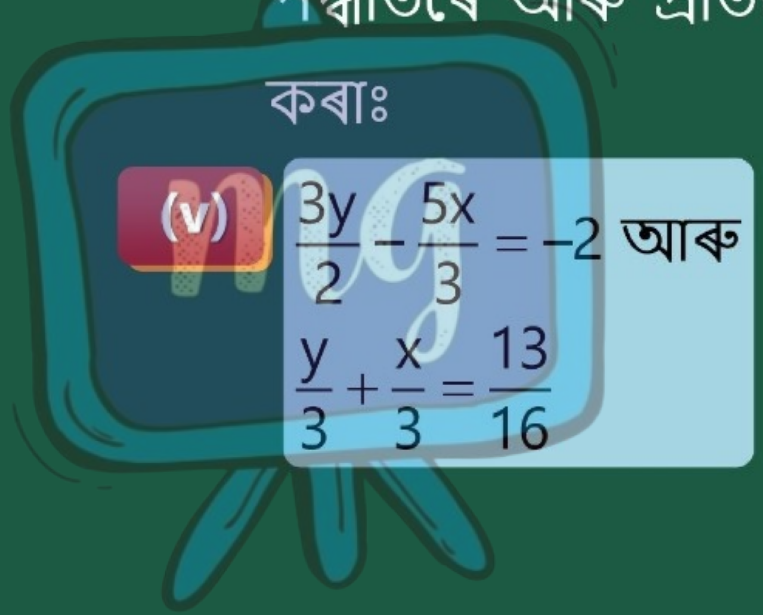
অংশ – ১৫

গায়ত্রী শইকীয়া

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1. তলৰ ৰৈখিক সমীকৰণকেইযোৰ অপনয়ন পদ্ধতিৰে আৰু প্ৰতিষ্ঠাপন পদ্ধতিৰে সমাধা কৰাঃ



(v) $\frac{3y}{2} - \frac{5x}{3} = -2$ আৰু

$\frac{y}{3} + \frac{x}{3} = \frac{13}{16}$

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সমাধান :

অপনয়ন :

$$\frac{3y}{2} - \frac{5x}{3} = -2$$

$$\Rightarrow -\frac{5}{3}x + \frac{3}{2}y = -2 \quad \text{---} (1)$$

$$\frac{y}{3} + \frac{x}{3} = \frac{13}{16}$$

$$\Rightarrow \frac{1}{3}x + \frac{1}{3}y = \frac{13}{16} \quad \text{---} (2)$$

$(2) \times 5 \Rightarrow \frac{5}{3}x + \frac{5}{3}y = \frac{5 \times 13}{16}$

$$\Rightarrow \frac{5}{3}x + \frac{5}{3}y = \frac{65}{16} \quad \text{---} (3)$$

(1) + (3)

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$$① + ③ \Rightarrow$$

$$-\frac{5}{3}x + \frac{3}{2}y + \frac{5}{3}x + \frac{5}{3}y = -2 + \frac{65}{16}$$

$$\Rightarrow \frac{3}{2}y + \frac{5}{3}y = \frac{-2\times16+65}{16}$$

$$\Rightarrow \left(\frac{3}{2}+\frac{5}{3}\right)y = \frac{-32+65}{16}$$

$$\Rightarrow \frac{9+10}{6}y = \frac{33}{16}$$

$$\Rightarrow \frac{19}{6}y = \frac{33}{16}$$

$$\Rightarrow 19y \times 16 = 6 \times 33$$

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$$\Rightarrow y = \frac{3 \cancel{6} \times 33}{19 \times \cancel{16}_{8}}$$

$$\Rightarrow y = \frac{99}{152}$$

② $\Rightarrow \frac{1}{3}x + \frac{1}{3}y = \frac{13}{16}$

$\Rightarrow \frac{1}{3}x + \frac{1}{\cancel{3}} \cdot \frac{\cancel{99}\ 33}{152} = \frac{13}{16}$

$\Rightarrow \frac{1}{3}x + \frac{33}{152} = \frac{13}{16}$

$\Rightarrow \frac{1}{3}x = \frac{13}{16} - \frac{33}{152}$

$\Rightarrow \frac{1}{3}x = \frac{13 \times 19 - 33 \times 2}{304}$

2	16, 152
2	8, 76
2	4, 38
	2, 19

ল. সা. গু = $2 \times 2 \times 2 \times 2 \times 19$

$= 16 \times 19$

$= 304$

16	
19	
144	
16	
304	

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$$\Rightarrow \frac{1}{3}x = \frac{13\times19 - 66}{304}$$

$$\Rightarrow \frac{1}{3}x = \frac{247 - 66}{304}$$

$$\Rightarrow \frac{1}{3}x = \frac{181}{304}$$

$$\Rightarrow x = \frac{3\times181}{304}$$

$$= \frac{543}{304}$$

$$\therefore x = \frac{543}{304},\ y = \frac{99}{152}\ //$$

$$\begin{array}{r|l} & 19 \\ & 13 \\ \hline & 57 \\ 19 & \\ \hline 247 & \end{array}$$

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$$\frac{3}{2}y - \frac{5}{3}x = -2 \quad \text{——} (1)$$

$$\frac{y}{3} + \frac{x}{3} = \frac{13}{16}$$

$$\Rightarrow \frac{x+y}{3} = \frac{13}{16}$$

$$\Rightarrow x + y = \frac{39}{16}$$

$$\Rightarrow y = \frac{39}{16} - x \quad \text{——} (2)$$

$(1) \Rightarrow \frac{3}{2}y - \frac{5}{3}x = -2$

$$\Rightarrow \frac{3}{2}\left(\frac{39}{16} - x\right) - \frac{5}{3}x = -2$$

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$$\Rightarrow \frac{3}{2} \cdot \frac{39}{16} - \frac{3}{2}x - \frac{5}{3}x = -2$$

$$\Rightarrow \frac{117}{32} - \left(\frac{3}{2} + \frac{5}{3}\right)x = -2$$

$$\Rightarrow \frac{117}{32} - \left(\frac{9+10}{6}\right)x = -2$$

$$\Rightarrow -\frac{19}{6}x = -2 - \frac{117}{32}$$

$$\Rightarrow -\frac{19}{6}x = \frac{-64-117}{32}$$

$$\Rightarrow +\frac{19}{6}x = \frac{+181}{32}$$

$$\Rightarrow x = \frac{181 \times 6 \; 3}{19 \times 32 \; 16}$$

$$\Rightarrow x = \frac{543}{304}$$

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$$② \Rightarrow y = \frac{39}{16} - x$$

$$= \frac{39}{16} - \frac{543}{304}$$

$$= \frac{39 \times 19 - 543}{304}$$

$$= \frac{741 - 543}{304}$$

$$= \frac{198}{304} \quad 99$$

$$= \frac{99}{152} \quad 152$$

$$\therefore x = \frac{543}{304}, \; y = \frac{99}{152} \; //$$

2	16,304
2	8,152
2	4,76
2	2,38
	1,19

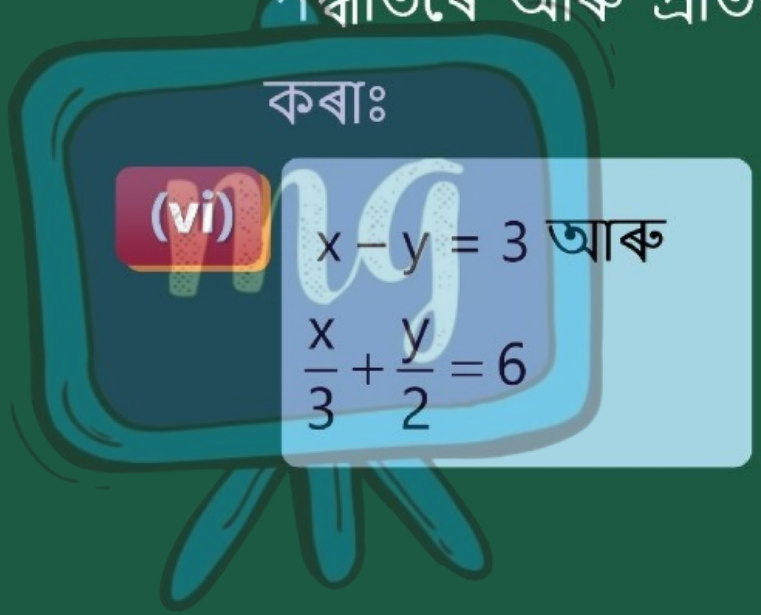
$16 \times 19 = 304$

39	8
19	
351	
39	
741	

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(vi) $x - y = 3$ আৰু

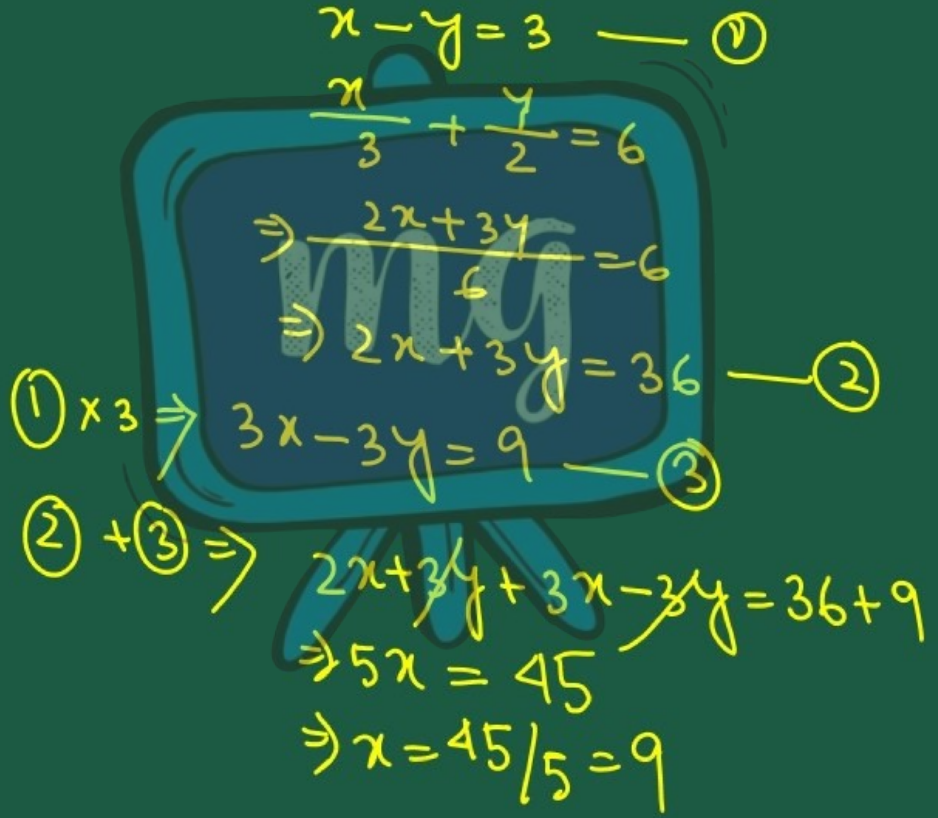
$$\frac{x}{3} + \frac{y}{2} = 6$$

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সমাধান :

অপনয়ন



$x - y = 3$ — ①

$\frac{x}{3} + \frac{y}{2} = 6$

$\Rightarrow \frac{2x+3y}{6} = 6$

$\Rightarrow 2x + 3y = 36$ — ②

① × 3 $\Rightarrow$ $3x - 3y = 9$ — ③

② + ③ $\Rightarrow$ $2x + 3y + 3x - 3y = 36 + 9$

$\Rightarrow 5x = 45$

$\Rightarrow x = 45/5 = 9$

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$① \Rightarrow x - y = 3$

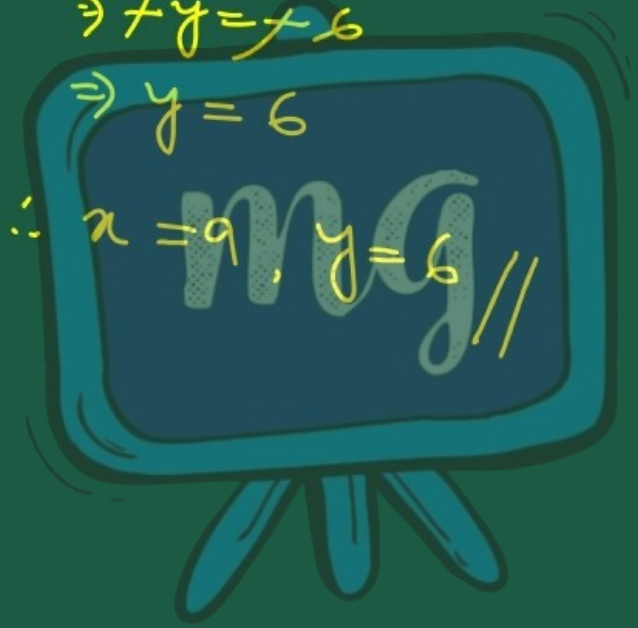
$\Rightarrow 9 - y = 3$

$\Rightarrow -y = 3 - 9$

$\Rightarrow +y = +6$

$\Rightarrow y = 6$

$\therefore x = 9, y = 6$ //



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প্রতিষ্ঠাপন :

$x - y = 3$

$\Rightarrow x = 3 + y \quad \text{— } ①$

$\frac{x}{3} + \frac{y}{2} = 6$

$\Rightarrow 2x + 3y = 36$

$\Rightarrow 2(3+y) + 3y = 36$, ① ব পৰা

$\Rightarrow 6 + 2y + 3y = 36$

$\Rightarrow 5y = 36 - 6$

$\Rightarrow 5y = 30$

$\Rightarrow y = \frac{30}{5} = 6$

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$① \Rightarrow x = 3 + y$

$= 3 + 6$

$= 9$

$\therefore x = 9, y = 6$

