Linear Equations in Two Variables

CHAPTER 4

TRY YOURSELF — SOLUTIONS

1. (i) We have, $2x + 3y = -5 \Rightarrow 2x + 3y + 5 = 0$
On comparing this equation with $ax + by + c = 0$, we get
$a = 2$, $b = 3$ and $c = 5$

(ii) We have, $3x - \frac{y}{2} - 8 = 0 \Rightarrow 6x - y - 16 = 0$
[Multiplying both sides by 2]
On comparing this equation with $ax + by + c = 0$, we get
$a = 6$, $b = -1$, $c = -16$

2. (i) $2x = -3$ can be written as $2x + 0 \cdot y + 3 = 0$

(ii) $5x = \frac{7}{2}$ can be written as $5 \cdot x + 0 \cdot y - \frac{7}{2} = 0$

or $10x + 0 \cdot y - 7 = 0$

(iii) $y = \frac{3}{2}x$ can be written as $\frac{3}{2}x - y + 0 = 0$

or $3x - 2y + 0 = 0$

3. Let cost of a ball pen = ₹ x
and cost of a fountain pen = ₹ y
Then, according to the given condition, we get
Cost of a ball pen = Half of the cost of a fountain pen – 6

$\Rightarrow \quad x = \frac{y}{2} - 6 \Rightarrow x = \frac{y - 12}{2}$

$\Rightarrow \quad 2x = y - 12 \Rightarrow 2x - y + 12 = 0$,
which is the required linear equation in two variables.

4. Let the cost of a note book be ₹ x and that of a pen be ₹ y.
Then, according to the given statement, we get
$x = 3y$ or, $1 \cdot x - 3y + 0 = 0$

5. Here, we can see that the cost of ticket neither to Agra nor to Mathura, is known.
So, let cost of ticket to Agra from Delhi be ₹ x
and cost of ticket to Mathura from Delhi be ₹ y
Then, according to the given condition, we get
$2x + 3y = 440$

6. Putting $x = -3$ and $y = -2$ in $2x - 7y + 8 = 0$, we get
L.H.S. $= 2(-3) - 7(-2) + 8 = -6 + 14 + 8 = 16 \neq$ R.H.S
So, $(-3, -2)$ is not a solution of $2x - 7y + 8 = 0$.

7. Putting $x = 2\sqrt{2}$ and $y = 3\sqrt{2}$ in $3y - 2x = 1$, we get
L.H.S. $= 3(3\sqrt{2}) - 2(2\sqrt{2}) = 9\sqrt{2} - 4\sqrt{2} = 5\sqrt{2} \neq$ R.H.S
So, $(2\sqrt{2}, 3\sqrt{2})$ is not a solution of $3y - 2x = 1$.

8. Since $x = 1$, $y = 1$ is a solution of $8x + 5y = k$, therefore it will satisfy the equation.
On putting $x = 1$ and $y = 1$ in this equation, we get
$8 \times 1 + 5 \times 1 = k \Rightarrow 8 + 5 = k \Rightarrow k = 13$

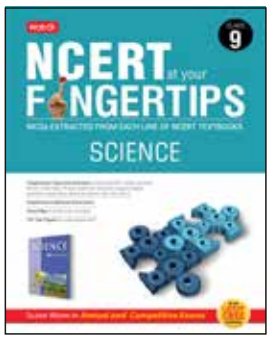
9. We have, $x = 2y$
Taking $x = 1$, we get $1 = 2y \Rightarrow y = \frac{1}{2}$
Taking $y = -4$, we get $x = 2(-4) \Rightarrow x = -8$
Thus, the solutions are $(1, 1/2)$ and $(-8, -4)$.

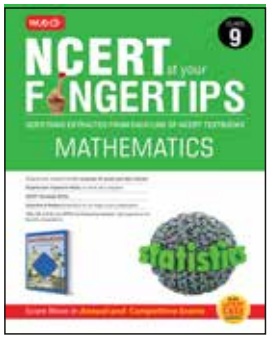
10. We have $7x - 5y = 35$
Taking $x = 0$, we get $-5y = 35 \Rightarrow y = -7$
Taking $y = 0$, we get $7x = 35 \Rightarrow x = 5$
Taking $x = 10$, we get $7(10) - 5y = 35 \Rightarrow y = 7$
Thus, the solutions are $(5, 0)$, $(0, -7)$ and $(10, 7)$.

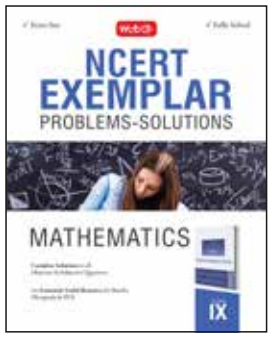
11. We have, $x + 2 = 0$
$\Rightarrow \quad x = -2$, for any value of y.
Thus, five solutions can be given as $(-2, 0)$, $(-2, 1)$, $(-2, 2)$, $(-2, 3)$ and $(-2, 4)$.

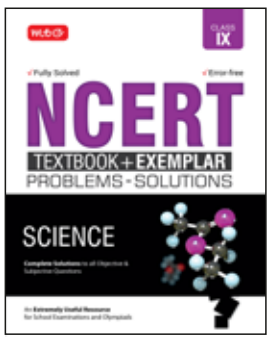
12. Let the number of goats and hens in the herd are x and y respectively. Then,
$4x + 2y = 40$
Taking $x = 0$, we get $2y = 40 \Rightarrow y = 20$
Taking $x = 2$, we get $2y = 32 \Rightarrow y = 16$
$\therefore \quad$ Two of its solutions are $(0, 20)$ and $(2, 16)$.

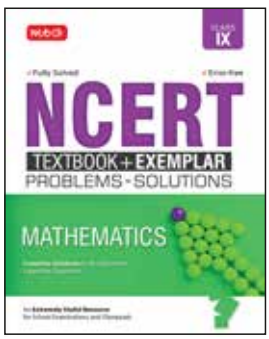
BEST SELLING BOOKS FOR CLASS 9

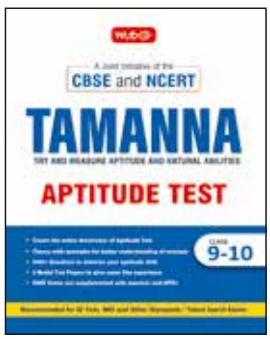


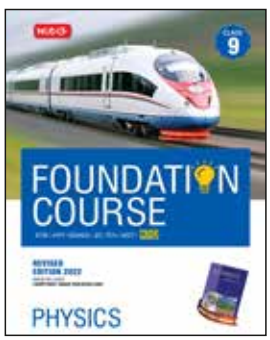


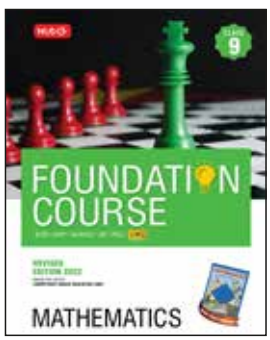


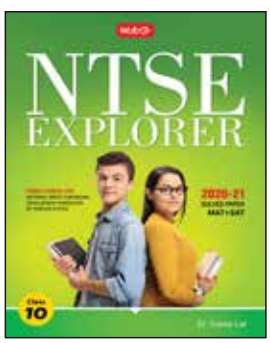


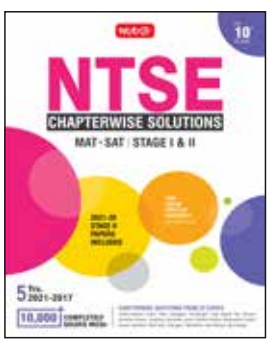


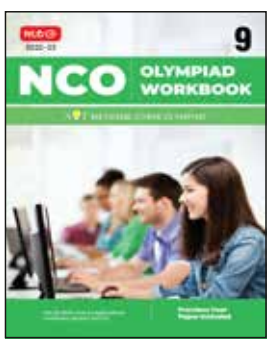


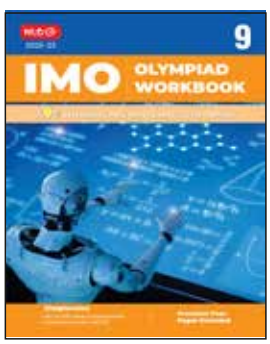


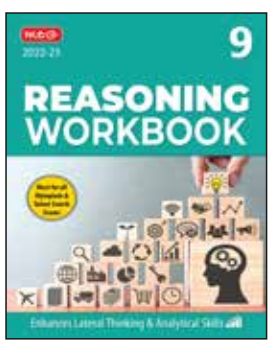












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