



September Sprint for CAT 2025

Class 19

Algebraic Equations and Identities



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September Sprint Schedule

Date	Topic	Date	Topic	Date	Topic
01-Sep	Number System - 1	11-Sep	Games and Tournament	21-Sep	Algebra - 3
02-Sep	Arrangement	12-Sep	Odd One Out	22-Sep	Logical DI
03-Sep	Number System - 2	13-Sep	Chart Based DI - 3	23-Sep	Geometry - 1
04-Sep	Para Completion	14-Sep	Arithmetic - 4	24-Sep	Reading Comprehension - 3
05-Sep	Arithmetic - 1	15-Sep	Venn Diagram	25-Sep	Geometry - 2
06-Sep	Chart Based DI - 1	16-Sep	Reading Comprehension - 2	26-Sep	Quantitative Reasoning
07-Sep	Arithmetic - 2	17-Sep	Algebra - 1	27-Sep	Geometry - 3
08-Sep	Reading Comprehension - 1	18-Sep	Routes and Network	28-Sep	Parajumbles
09-Sep	Chart Based DI - 2	19-Sep	Algebra - 2	29-Sep	Misc. LR topics
10-Sep	Arithmetic - 3	20-Sep	Para Summary	30-Sep	Modern Maths





Preparing for MBA exams for 2025-26?



- Recorded concept videos
- Solved questions – basic to advanced
- Topic wise Practice sheets
- Doubt Resolution Group
- Doubt session live classes
- In VA, grammar and vocab also covered
- In LR, OMET topics covered

Price: **15000/-**

Section-wise modules are also available



Pause the video, solve the question and then look at the solution!



Find the solution to the following system of equations:

$$2(ax - by) + (a + 4b) = 0$$

$$2(bx + ay) + (b - 4a) = 0$$

A. $x = -1, y = 1$

B. $x = 1/2, y = 2$

C. $x = 2, y = -1/2$

D. $x = -1/2, y = 2$



Find the value of k for which the given system of equations has infinitely many solutions

$$x + (k + 1)y = 5$$

$$(k + 1)x + 9y + (1 - 8k) = 0$$



How many non-negative integral solutions are there for $2x + 3y = 42$?



How many positive integer solutions exist for the equation $5x - 3y = 70$ such that $x > y$

- A. 5
- B. 6
- C. 7
- D. 8



Find the number of positive integer solutions of $\frac{2}{x} + \frac{3}{y} = \frac{1}{20}$.

- A. 18
- B. 24
- C. 30
- D. 36



Using only 2, 5, and 10 Rs. coins, what will be the minimum number of coins required to pay exactly 78 Rs., 59 Rs., and 91 Rs. to three different persons?

- A. 26
- B. 31
- C. 35
- D. 42



Two passengers, Puneet and Suneet have 60 kg of luggage between them and are charged Rs. 1200 and Rs. 2400 respectively for excess luggage. Had the entire luggage been logged to one of them, the excess luggage charge would have been Rs. 5400. What is the luggage carried by Puneet?

- A. 20 kg
- B. 24 kg
- C. 25 kg
- D. 28 kg



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The condition that the equation $ax^2 + bx + c = 0$ has one positive and other negative root is:

- A. a and c will have the same sign
- B. a and c will have opposite signs
- C. b and c will have the same sign
- D. b and c will have opposite signs



Find the value of 'z', if the following equation has equal roots: $(z - 2)x^2 - (5 + z)x + 16 = 0$

- A. $z = 5, 48$
- B. $z = 3, 51$
- C. $z = 9, 36$
- D. $z = 10, 32$



If the sum of the reciprocal of the roots of the equation $ax^2 + bx + c = 0$ is $-3/5$ and the product of the roots of the equation $cx^2 + bx + a = 0$ is $9/20$, find the sum of the roots of the equation $bx^2 + ax + c = 0$

- A. $4/3$
- B. $-27/100$
- C. $-4/3$
- D. $-3/4$



If $x^2 + y^2 = 10x + 6y - 34$, what is $x + y$?



A teacher wrote a quadratic equation on the board. Sanjay copied the constant incorrectly and got the roots (3, 12). Naval incorrectly copied the coefficient of x and got the roots (4, 14). The actual roots are:

- A. 3, 14
- B. 4, 12
- C. 7, 8
- D. 8, 11



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XGMT 2026: 5 Mocks
SRCC GBO 2026: 5 Mocks

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$x^3 - 4x^2 + mx - 2 = 0$ has 3 positive roots, two of which are p and $1/p$. Find the value of m .



The value of k for which the number 3 lies between the roots of equation $x^2 + (1-2k)x + (k^2-k-2) = 0$ is given by

- A. $k > 5$
- B. $2 < k < 3$
- C. $2 < k < 5$
- D. $k < 3$



If $a^2 + b^2 + c^2 = 2(a - b - c) - 3$, then the value of $a + b + c$ is

- A. -2
- B. -1
- C. 0
- D. 3



If $x^3 - 4x^2 + 19 = 6(x - 1)$ then what is the value of $x^2 + \frac{1}{x-4}$?

- A. 3
- B. 4
- C. 5
- D. 6



If $\sqrt{x + 20\sqrt{3}} - \sqrt{x - 20\sqrt{3}} = 4\sqrt{3}$, then x equals



The polynomials $p(x) = ax^3 + 3x^2 - 3$ and $q(x) = 2x^3 - 5x + a$ when divided by $(x - 4)$ leave the same remainder in each case. Find the value of a .



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1. How many positive integer solutions does the equation $7x + 9y = 281$ have?
2. A hotel has 260 rooms. Some are singles, and some are doubles. The singles cost ₹ 3500 and the doubles cost ₹ 6000. On a particular night, all of the hotel rooms are occupied. The sales for this night are ₹ 14,00,000. How many single rooms does the hotel have?
A. 64 B. 56 C. 48 D. 72
3. If the roots of the equation $(b-c)x^2 + (c-a)x + (a-b) = 0$ are real and equal, then
A. $a + c = b$
B. $a + b = c$
C. $a + c = 2b$
D. $a + b = 2c$
4. If $(x-y)(x^2 + y^2) = 965$ and $(x+y)(x^2 - y^2) = 1805$, where x and y are positive integers, find the value of xy .
5. If $a^2 + c^2 + 17 = 2(a - 8b - 2b^2)$, what is the value of $a^3 + b^3 + c^3$?
A. -7
B. -1
C. 4
D. 9

Answer in Comments



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