

Target 2026-27 Exams

Selection Batch **Class-01**

ALGEBRA

ZERO TO HERO

एकदम Basic से शुरूआत

ALGEBRA+QUADRATIC EQUATION

NO. OF SHEETS → 06 ✓

NO. OF QUESTIONS → 400+ ✓

NO. OF CLASSES → 18-20 ✓

RAILWAY EXAM में QUADRATIC EQUATION
के ज्यादा और बहुत अच्छे QUESTIONS आते है



ALGEBRA



SSC+ RAILWAY EXAMS
2-3 QUESTIONS

CDS+DEFENCE EXAMS
10%+ WEIGHTAGE

INCLUDE 2018-2025 (SSC+RAILWAY)

SSC EXAMS

- CGL ✓
- CHSL ✓
- CPO ✓

RAILWAY EXAMS

- RAILWAY (NTPC GRADUATE LEVEL + 12TH LEVEL)
- RRB ALP
- PARAMEDICAL
- SECTIONAL CONTROLLER
- RRB GROUP D

CDS



SELECTION BATCH 7.0

○ BASIC TO ADVANCE (PRE+MAINS) ○

ADMISSION STARTS:- 7 APRIL 7PM

● Course Validity: 2 Years

**BATCH STARTS
20 APRIL**



Maths
Gagan Sir



English
Aman Sir



Reasoning
Balram Sir



G.S.
Varun Sir

India's No. 1 Team

Course Fee:- ₹1599/-

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MATHS SPECIAL 7.0

○ ZERO TO HERO (PRE+MAINS) ○

ADMISSION STARTS:- 7 APRIL 7PM

● Course Validity: 2 Years

**BATCH STARTS
20 APRIL**

INCLUDES

- ✓ Live Classes
- ✓ Pdf Notes & 100+ Tests
- ✓ Conceptual Clarity
- ✓ Result Oriented Approach

USEFUL FOR

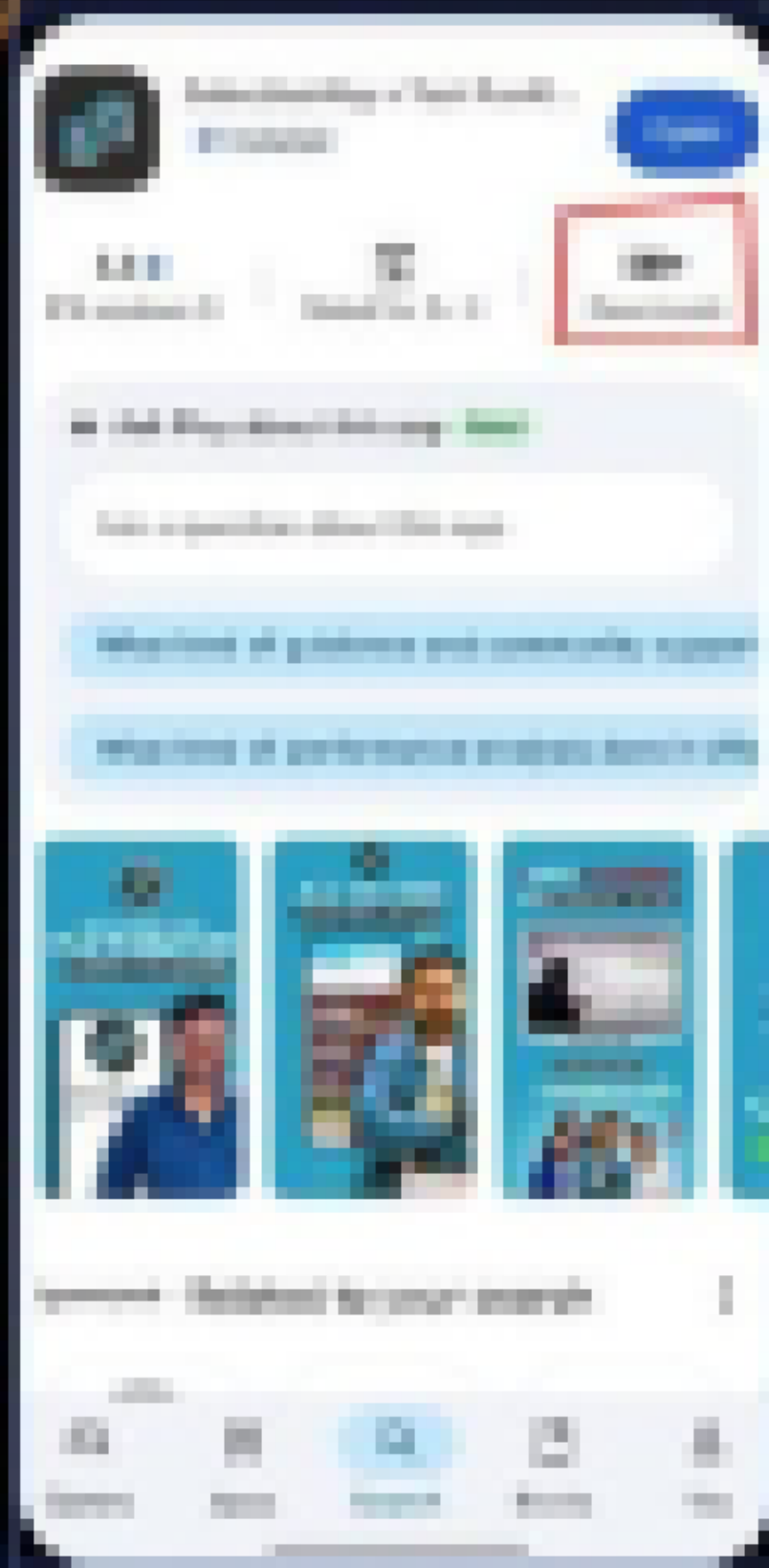
- ✓ SSC Exams
- ✓ Railway Exams
- ✓ All Competitive Exams



Gagan Pratap Sir

Course Fee:- ₹999/-

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5 MILLION DOWNLOADS



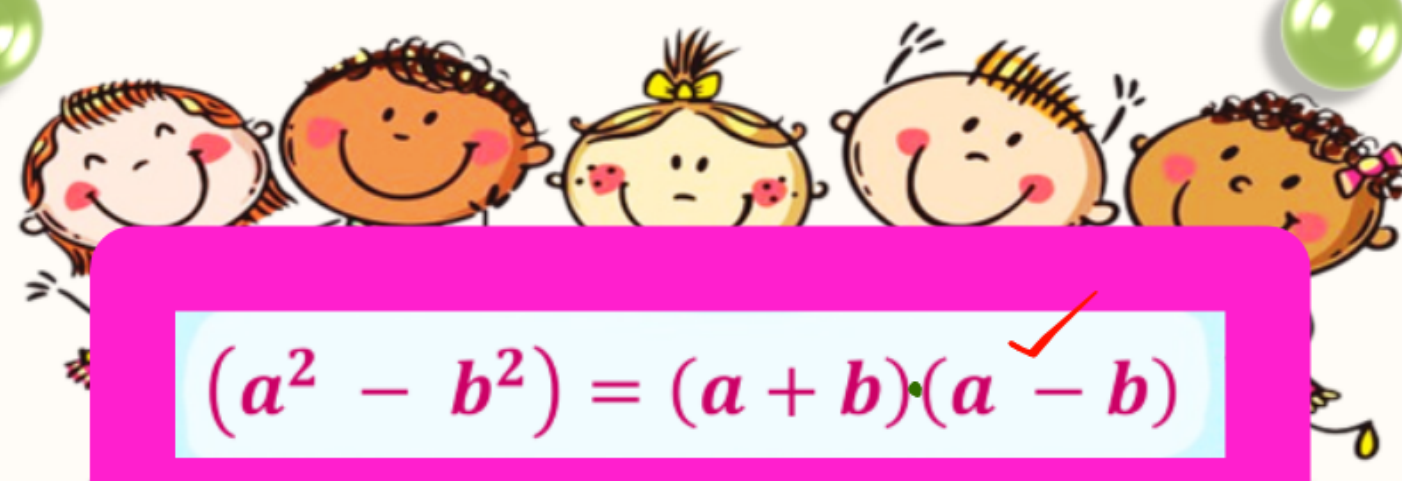
Selectionway App

🙏 सभी बच्चों का 🙏
दिल से धन्यवाद

ALGEBRAIC FORMULAS

बीजगणितीय सूत्र





$$(a^2 - b^2) = (a + b)(a - b)$$

$$\frac{a^2 - b^2}{a + b} = a - b$$

$$\frac{a^2 - b^2}{a - b} = a + b$$

Example

$$(2x + 7) \times (2x - 7) = ? \quad (2x)^2 - 7^2 = 4x^2 - 49$$

$$(a+b) \cdot (a-b) = a^2 - \cancel{ab} + \cancel{ab} - b^2$$

1. What is the expansion of $(x + 11)(x - 11)$?

$(x + 11)(x - 11)$ का प्रसार क्या है?

SSC CHSL PRE 2022

[A] $x^2 + 11$

[C] $x^2 + 121$

☒ [B] $x^2 - 121$

[D] $x^2 - 11$

$\rightarrow x^2 - 11^2$

2. The value of $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is?

$(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ का मान क्या है?

(RRB ALP 2024)

[A] $x^2 + y^2 + z^2$

[B] $x + y + z$

✓ [C] 0

[D] $xy + yz + zx$

$$\cancel{x^2 - y^2} + \cancel{y^2 - z^2} + \cancel{z^2 - x^2} = 0$$

3. If $m^2 - n^2 = 63$ and $m - n = 7$, find the value of $m + n$.

यदि $m^2 - n^2 = 63$ and $m - n = 7$, है, तो $m + n$ का मान ज्ञात कीजिए।

SSC CHSL PRE 2022

[A] 7

[C] 24

[B] 9 ✓

[D] 18

$= \frac{63}{7}$

4. **Simplify/सरल कीजिए।**

$$\frac{36a^2 - 49b^2}{6a + 7b}$$

$$6a + 7b$$

✓ [A] $6a - 7b$

[C] $6a + 7b$

$$\frac{(6a)^2 - (7b)^2}{6a + 7b}$$

[B] $\frac{1}{6a - 7b}$

[D] $7b - 6a$

{ 30 Table
50 वर्ग
25 cube

5. If $\frac{1}{x^2 + a^2} = x^2 - a^2$, then the value of x is?

यदि $\frac{1}{x^2 + a^2} = x^2 - a^2$ है, तो x का मान क्या होगा?

[A] $(1 - a^4)^{\frac{1}{4}}$

[B] a

[C] $(a^4 - 1)^{\frac{1}{4}}$

☒ [D] $(a^4 + 1)^{\frac{1}{4}}$

$$1 = x^4 - a^4$$

$$1 + a^4 = x^4$$

$$(1 + a^4)^{\frac{1}{4}} = x$$

$$(a^m)^n = a^{m.n}$$

$$(x^2)^2 = x^4$$

$$(\textcircled{x^3})^4 = x^{3 \times 4} = x^{12}$$

if $a^n = a$
 ~~$(a^n)^n = a^n$~~
 तो $a = \sqrt[n]{a}$

$a^n = \underbrace{a \times a \times a \times \dots \times a}_n$

$$(\textcircled{5^6})^{13} = 5^{78}$$

$$a^{\frac{1}{2}} = \sqrt{a} \checkmark$$

$$a^{\frac{1}{3}} = \sqrt[3]{a} \checkmark$$

$$a^{\frac{1}{5}} = \sqrt[5]{a} \checkmark$$



6. Simplify the expression $(36p^2 + 49q^2)(6p + 7q)(6p - 7q)$
व्यजक $(36p^2 + 49q^2)(6p + 7q)(6p - 7q)$ का मान ज्ञात कीजिए।
(SSC CHSL 2023 PRE)

[A] $1296 p^4 + 2401 q^4$

[B] $36p^4 - 49q^4$

[C] $1296p^4 - 2401q^4$

[D] $36p^4 + 49q^4$

$$\begin{aligned} & (36p^2 + 49q^2) \times (36p^2 - 49q^2) \\ &= (36p^2)^2 - (49q^2)^2 \end{aligned}$$

7. Simplify the following expression: $(x + y)(x - y)(x^2 + y^2)(x^4 + y^4)(x^8 + y^8)(x^{16} + y^{16})$?

निम्नलिखित अभिव्यक्ति $(x + y)(x - y)(x^2 + y^2)(x^4 + y^4)(x^8 + y^8)(x^{16} + y^{16})$ को सरल बनाएं:

[A] $x^{128} - y^{128}$

[C] $x^{256} - y^{28}$

[B] $x^{64} - y^{64}$

[D] $x^{32} - y^{32}$

$(x^2 - y^2) \times (x^4 - y^4) \times (x^8 - y^8) \times (x^{16} - y^{16})$

$$= (x^{16})^2 - (y^{16})^2$$
$$= x^{32} - y^{32}$$

8. The simplified value of is $\left(x - \frac{1}{x}\right) \left(x + \frac{1}{x}\right) \left(x^2 + \frac{1}{x^2}\right) \left(x^4 + \frac{1}{x^4}\right)$ is:

$\left(x - \frac{1}{x}\right) \left(x + \frac{1}{x}\right) \left(x^2 + \frac{1}{x^2}\right) \left(x^4 + \frac{1}{x^4}\right)$ सरलीकृत मान ज्ञात कीजिए।

(RRB GROUP-D 2025)

[A] $\left(x^7 - \frac{1}{x^7}\right)$

[C] $\left(x^7 + \frac{1}{x^7}\right)$

☒ [B] $\left(x^8 - \frac{1}{x^8}\right)$

[D] $\left(x^8 + \frac{1}{x^8}\right)$

9. Simplify the following expression.

निम्नलिखित व्यंजक को सरल कीजिए।

$$[(1+p)(1+p^2)(1+p^4)(1+p^8)(1+p^{16})(1-p) - 1]$$

SSC CGL 2023 PRE

☒ [A] $-p^{32}$

[B] p^{32}

[C] $(1+p^{32})$

[D] $(1-p^{32})$

$1-p^2$

~~$1-p^{32}$~~

10. What is the value of/का मान क्या है?

$$\left(k + \frac{1}{k}\right) \left(k - \frac{1}{k}\right) \left(k^2 + \frac{1}{k^2}\right) \left(k^4 + \frac{1}{k^4}\right) \left(k^8 + \frac{1}{k^8}\right) \left(k^{16} + \frac{1}{k^{16}}\right) \left(k^{32} + \frac{1}{k^{32}}\right)?$$

SSC CHSL TIER - I 2022

[A] $\frac{k^{64} - \frac{1}{k^{64}}}{k + \frac{1}{k}}$

[B] $\frac{k^{32} - \frac{1}{k^{32}}}{k - \frac{1}{k}}$

[C] $\frac{k^{32} - \frac{1}{k^{32}}}{k + \frac{1}{k}}$

[D] $\frac{k^{32} + \frac{1}{k^{64}}}{k + \frac{1}{k}}$

11. $(a + b - c + d)^2 - (a - b + c - d)^2 = ?$

☒ [A] $4a(b + d - c)$

[B] $2a(a + b - c)$

[C] $2a(b + c - d)$

[D] $4a(b - d + c)$

$$= 2a \times (2b - 2c + 2d)$$

$$= 4a(b - c + d)$$

$$(a + b)^2 = a^2 + b^2 + 2ab$$

$$(a - b)^2 = a^2 + b^2 - 2ab$$



$$(a+b)^2 + (a-b)^2 = 2(a^2 + b^2)$$

$$(a+b)^2 - (a-b)^2 = 4ab$$

$$\Rightarrow (a+b)^2 = \underline{(a-b)^2} + 4ab$$

$$(a-b)^2 = (a+b)^2 - 4ab$$

$$a-b \checkmark$$

$$ab \checkmark$$

$$a+b = ?$$

12. **Expand:** $(4x - 7)^2 = ?$

विस्तृत करें: $(\underset{a}{4x} - \underset{b}{7})^2 = ?$ $(4x)^2 - 2 \times 4x \times 7 + (7)^2$

(SSC CPO 2025)

[A] $16x^2 + 42x + 49$

[B] $9x^2 - 42x + 49$

☒ [C] $16x^2 - 56x + 49$

[D] $9x^2 - 21x + 49$

13. If the satellite signal equation is $(3x - 4)^2$, what would be its expanded form?

यदि उपग्रह सिग्नल समीकरण $(3x - 4)^2$ हो, तो उसका विस्तारित रूप क्या होगा?

SSC CHSL PRE 2025

[A] $9x^2 - 12x + 16$

[C] $9x^2 - 24x - 16$

[B] $9x^2 - 24x + 16$

[D] $6x^2 - 24x + 1$

14. Simplify the following expression $49a^2 + 70ab + 25b^2$?
निम्नलिखित अभिव्यक्ति को सरल बनाएं $49a^2 + 70ab + 25b^2$?
(SSC SELECTION POST XII HIGHER SECONDARY LEVEL)

[A] $(7a \times 5b)^2$

[B] $(7a + 5b)^2$

[C] $(5a + 7b)^2$

[D] $(5a - 7b)^2$

$a \rightarrow 7a$

$b \rightarrow 5b$

15. Factorise $361a^2 + 152ab + 16b^2$.

$361a^2 + 152ab + 16b^2$ का गुणनखंड कीजिए।

(IB ACIO GRADE-2 2025)

[A] ~~$(4a - 19b)^2$~~

[C] $(19a + 4b)^2$

[B] ~~$(4a + 19b)^2$~~

[D] ~~$(19a - 4b)^2$~~

16. Which among the below option can be a square root of?

निम्नलिखित का वर्गमूल क्या है?

$(x^2 - 14x + 49)(x^2 + 6x + 9)$

(SSC CHSL 2021)

~~[A] $(x - 4)(x + 9)$~~

~~[B] $(x - 1)(x + 17)$~~

☒ [C] $(x - 7)(x + 3)$

~~[D] $(x - 3)(x + 8)$~~

$$\sqrt{n^2} = n$$

17. **Simplify** $(5x + 4y)^2 + (5x - 4y)^2$?

$(5x + 4y)^2 + (5x - 4y)^2$ सरल कीजिये

[A] ~~$32x^2 + 50y^2$~~

[B] $50x^2 + 32y^2$

[C] ~~$-80xy$~~

[D] ~~$80xy$~~

$= 2 \times (25x^2 + 16y^2)$

$(a+b)^2 + (a-b)^2 = 2(a^2 + b^2)$

18. If $x = \sqrt{10} + \sqrt{3}$ and $y = \sqrt{10} - \sqrt{3}$ then find $x^2 + y^2$.

यदि $x = \sqrt{10} + \sqrt{3}$ और $y = \sqrt{10} - \sqrt{3}$ है, तो $x^2 + y^2$ ज्ञात कीजिए।

(SSC CHSL PRE 2025)

[A] 26 ✓

[C] 25

[B] 56

[D] 15

$$\begin{aligned} &= (\sqrt{10} + \sqrt{3})^2 + (\sqrt{10} - \sqrt{3})^2 \\ &= 2 \times (10 + 3) \\ &= 26 \end{aligned}$$

$$(\sqrt{ae})^2 = ae$$

19. If $x = 3 + 2\sqrt{2}$ and $y = 3 - 2\sqrt{2}$, find the value of $x^2 + y^2$ by direct calculation.
यदि $x = 3 + 2\sqrt{2}$ और $y = 3 - 2\sqrt{2}$ है तो प्रत्यक्ष गणना द्वारा $x^2 + y^2$ का मान ज्ञात कीजिए।
(RRB GROUP-D 2025)

$$= 2 \times (9 + 8)$$

[A] 34

[B] 26

[C] 32

[D] 36

20. Find the value of $(2a + 3b)^2 - (2a - 3b)^2$?

$(2a + 3b)^2 - (2a - 3b)^2$ का मान ज्ञात कीजिए ?

~~[A] 12ab~~

$$= 4 \times 2a \times 3b$$

[B] 16ab

☒ [C] 24ab

[D] 18ab

$$(a+b)^2 - (a-b)^2 = 4ab$$

21. Simplify $(2pq + 11q)^2 - (2pq - 11q)^2$.

$(2pq + 11q)^2 - (2pq - 11q)^2$ को सरल कीजिए।

(RRB Technician Grade-3 2025)

[A] $44pq^2$

[C] $88pq^2$

[B] $44p^2q^2$

[D] $88p^2q$

$$= 4 \times 2 \times 2 \times 11 \times q$$

22. What is the simplified value of: $\frac{1}{8} \left\{ \left(x + \frac{1}{y} \right)^2 - \left(x - \frac{1}{y} \right)^2 \right\}$?

$\frac{1}{8} \left\{ \left(x + \frac{1}{y} \right)^2 - \left(x - \frac{1}{y} \right)^2 \right\}$ को सरल कीजिए।

(CPO 2019)

[A] $\frac{x}{y}$

[C] $\frac{x}{2y}$ ✓

[B] $\frac{2x}{y}$

[D] $\frac{4x}{y}$

$= \frac{1}{8} \times 4x \times \frac{1}{y}$

23. If $a^2 + b^2 = 148$ & $ab = 54$, then the value of $\frac{a+b}{a-b}$ is?

यदि $a^2 + b^2 = 148$ & $ab = 54$, तो $\frac{a+b}{a-b}$ का मान क्या है?

SSC CGL Pre 2024

[A] $8/\sqrt{10}$

[B] $2/\sqrt{10}$

[C] $8\sqrt{7}$

[D] $5\sqrt{3}$

H.W

24. If $a^2 + b^2 = 179$ and $a \times b = 14$, then find $\frac{(a-b)}{(a+b)}$, where $a > b$.

यदि $a^2 + b^2 = 179$ और $a \times b = 14$ है, तो $\frac{(a-b)}{(a+b)}$ जहां $a > b$ है, का मान ज्ञात कीजिए।

(RRB NTPC GRADUATION LEVEL 2025)

[A] $\frac{411}{445}$

[B] $\sqrt{\frac{171}{217}}$

[C] $\sqrt{\frac{240}{281}}$

[D] $\frac{240}{281}$