



SSC

SELECTION POST | CGL

ALGEBRA

MATHEMATICS

2024-25 का निचोड़

Daily Live
3:00 pm

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ALGEBRA PART-01

$$(p+4) + \frac{1}{p+4} = 5$$

यदि $p^2 + 3p = 3$ है, तो $(p + 4)^3 + 1/(p + 4)^3$ का मान ज्ञात कीजिए।

- A) 55
B) 110
C) 52
D) 104

$$5^3 - 3 \times 5 = 110$$

If $x + 1/x = -3$, find the value of $x^3 + 1/x^3$

यदि $x + 1/x = -3$ है, तो $x^3 + 1/x^3$ का मान ज्ञात कीजिए

RRB-NTPC-Graduate, CBT-1, 18/03/2026, (Shift-I)

$$x + \frac{1}{x} = -3$$

$$x^3 + \frac{1}{x^3} =$$

$$x + \frac{1}{x} = k$$

$$x^3 + \frac{1}{x^3} = k^3 - 3k$$

$$(-3)^3 - 3(-3)$$

$$-27 + 9$$

$$= -18$$

(A) 9

(B) -3

(C) 0

(D) -18

$$x + \frac{1}{18x} = 3$$

$$\boxed{18x^3 + \frac{1}{324x^3} = ?}$$

यदि $x + \frac{1}{18x} = 3$ है, तो $18x^3 + \frac{1}{324x^3}$ का मान ज्ञात कीजिए।

If $x + \frac{1}{18x} = 3$ find the value of $18x^3 + \frac{1}{324x^3}$

RRB-NTPC-Graduate, CBT-1, 17/03/2026, (Shift-III)

A. 431

✓ B. 477

C. 491

D. 465

$$x^3 + \frac{1}{5832x^3} = 3^3 - 3 \times x \times \frac{1}{18x}$$

$$= (27 - \frac{1}{2})^2$$

Solⁿ ⇒

$$18 \left(x^3 + \frac{1}{5832x^3} \right) = \frac{9}{2} \times \frac{53}{2}$$

$$= 477$$

$$y - 3 - 9 = 4\sqrt{5}$$

$$y - 3 = 4\sqrt{5} + 9$$

$$(y - 3) + \frac{1}{y - 3} = 18$$

$$\sqrt{y - 3} + \frac{1}{\sqrt{y - 3}} = \sqrt{18} - 2$$

$$= \sqrt{16} = 4$$

If $(y - 12) = 4\sqrt{5}$ find the value of -

यदि $(y - 12) = 4\sqrt{5}$ है, तो निम्नलिखित का मान ज्ञात कीजिए।

$$\sqrt{y - 3} - \frac{1}{\sqrt{y - 3}}$$

RRB NTPC-Graduate CBT-1, 16/03/2026, (Shift-I)

A) 8

✓ B) 4

C) 9

D) 6

$(x + 9)(x - 6)(x + 5)$ के प्रसार में, x का गुणांक कितना है?

In the expansion of $(x + 9)(x - 6)(x + 5)$ what is the coefficient of x ?

**RRB-Technician Grade-III,
09/03/2026,(Shift-1)**

$$\begin{aligned} x &= ab + bc + ca \\ &= 9 \times -6 + -6 \times 5 + 9 \times 5 \\ &= -54 - 30 + 45 \\ &= -54 + 15 = -39 \end{aligned}$$

- ☒ A. - 39
- B. - 35
- C. 33
- D. 30

$$x = 5 + 2\sqrt{6} \quad a^2 - b^2 = 1$$

$$x + \frac{1}{x} = 10$$

$$\frac{x-1}{\sqrt{x}} = \frac{x}{\sqrt{x}} - \frac{1}{\sqrt{x}} = \sqrt{x} - \frac{1}{\sqrt{x}} = \sqrt{10-2}$$

$$= \sqrt{8}$$

$$= 2\sqrt{2}$$

यदि $x = 5 + 2\sqrt{6}$, है तो $(x-1)/\sqrt{x}$ का मान ज्ञात कीजिए।

If $x = 5 + 2\sqrt{6}$, find the value of $(x-1)/\sqrt{x}$

**RRB-Technician Grade-III,
10/03/2026.(Shift-1)**

A) $3\sqrt{2}$

B) $\sqrt{2}$

☒ C) $2\sqrt{2}$

D) $\sqrt{3} + \sqrt{2}$

$$\begin{aligned} & 25z^2 + 144y^2 - \cancel{120zy} + \cancel{144z^2} + 25y^2 \\ & \quad + \cancel{120zy} - \cancel{144z^2} \\ & = 25z^2 + 169y^2 \end{aligned}$$

$(5z - 12y)^2 + (12z + 5y)^2 - 144z^2$ को सरल कीजिए।

Simplify: $(5z - 12y)^2 + (12z + 5y)^2 - 144z^2$

RRB-Technician Grade-III, 06/03/2026, (Shift-1)

- ☒ A. $25z^2 + 169y^2$
- B. $31z^2 + 161y^2$
- C. $32z^2 + 170y^2$
- D. $24z^2 + 171y^2$

$$x = 9 + 4\sqrt{5}, y = 9 - 4\sqrt{5}$$

$$x^2 + y^2 = (9 + 4\sqrt{5})^2 + (9 - 4\sqrt{5})^2$$

$$= 2[9^2 + (4\sqrt{5})^2]$$

$$= 2[81 + 80]$$

$$= 2 \times 161 = 322$$

$x^2 + y^2$ का मान ज्ञात कीजिए। यदि -

find the value of $x^2 + y^2$ If-

$$x = \frac{\sqrt{5}+2}{\sqrt{5}-2}$$

$$x = (\sqrt{5}+2)^2$$

and

$$y = \frac{\sqrt{5}-2}{\sqrt{5}+2}$$

$$y = (\sqrt{5}-2)^2$$

RRB-Technician Grade-III, 06/03/2026, (Shift-II)

A. 311

B. 312

☒ C. 322

D. 302

$$\begin{aligned}
 x^2 + \frac{1}{x^2} &= 16 & x^4 + \frac{1}{x^4} &=? \\
 & & &= 16^2 - 2 \\
 & & &= 256 - 2 \\
 & & &= 254
 \end{aligned}$$

यदि $x^2 + \frac{1}{x^2} = 16$ और $x \neq 0$ है, तो $x^4 + \frac{1}{x^4}$ का मान ज्ञात कीजिए।

If $x^2 + \frac{1}{x^2} = 16$ and $x \neq 0$, find the value of $x^4 + \frac{1}{x^4}$

RRB-Technician Grade-III, 06/03/2026, (Shift-II)

A. 252

B. 258

☒ C. 254

D. 260

$$ab(a+b)$$

$$4 \times 13 = \textcircled{52}$$

यदि $a + b + c = 13$ और $ab + bc + ca = 4$ है, तो $ab(a+b) + bc(b+c) + ca(c+a) + 3abc$ का मान कितना होगा?

If $a + b + c = 13$ and $ab + bc + ca = 4$ find the value of $ab(a+b) + bc(b+c) + ca(c+a) + 3abc$.

RRB-Technician Grade-III, 10/03/2026, (Shift-11)

- A) 52
- B) 17
- C) 38
- D) 9

$$ab(a+b) + bc(b+c) + ca(c+a) + 3abc$$

$$= (a+b+c)(ab+bc+ca)$$

$$13 \times 4 = \textcircled{52}$$

$$\begin{aligned} \frac{a}{b} + \frac{b}{a} &= \frac{a^2 + b^2}{ab} \\ &= \frac{(a+b)^2 - 2ab}{ab} = \frac{12^2 - 2 \times 8}{8} \\ &= \frac{144 - 16}{8} \\ &= \frac{128}{8} = 16 \end{aligned}$$

यदि $a + b = 12$ और $ab = 8$ है, तो $(a/b + b/a)$ का संख्यात्मक मान क्या होगा?

If $a + b = 12$ and $ab = 8$, find the numerical value of $(a/b + b/a)$.

RRB-Technician Grade-III, 10/03/2026, (Shift-III)

- A) 14
- ☒ B) 16
- C) 12
- D) 20

$$a = x + \frac{2}{x}, b = x - \frac{2}{x} \Rightarrow a + b = 2x$$

$$a - b = \left(\frac{4}{x}\right)$$

Asked :- $a^4 + b^4 - 2a^2b^2 = (a^2 - b^2)^2$
 $= [(a+b)(a-b)]^2 = \left[2x \times \frac{4}{x}\right]^2$
 $= 8^2 = 64$

यदि $a = x + 2/x$ और $b = x - 2/x$ है, तो $a^4 + b^4 - 2a^2b^2$ का मान ज्ञात कीजिए।

If $a = x + 2/x$ and $b = x - 2/x$ find the value of $a^4 + b^4 - 2a^2b^2$

RRB NTPC Graduate CBT-1, 22/03/2026, (Shift-III)

A. 16

✓ B. 64

C. 36

D. 49

$$x^4 - 83x^2 + 1 = 0$$

$$x^2(x^2 - 83 + \frac{1}{x^2}) = 0$$

$$x^2 + \frac{1}{x^2} = 83$$

↓

$$x - \frac{1}{x} = \sqrt{83 - 2} = \sqrt{81} = 9$$

$$x^3 - \frac{1}{x^3} = 9^3 + 3 \times 9$$

$$= 729 + 27 = 756$$

If $x^4 - 83x^2 + 1 = 0$ and $x > 0$, find the value of $\sqrt{(x^3 - x^{-3} + 28)}$.

यदि $x^4 - 83x^2 + 1 = 0$ और $x > 0$ है, तो $\sqrt{(x^3 - x^{-3} + 28)}$ का मान ज्ञात कीजिए।

B NTPC Graduate CBT-1, 22/03/2026(Shift-I)

A) 27

B) 29

C) 26

☒ D) 28

Asked :-

$$\sqrt{x^3 - \frac{1}{x^3} + 28} = ?$$

$$= \sqrt{756 + 28} = \sqrt{784} = \textcircled{28}$$

$$a + \frac{1}{a} = 4$$

$$a^2 + \frac{1}{a^2} = 4^2 - 2 = 14$$

$$a^3 + \frac{1}{a^3} = 4^3 - 3 \times 4 = 52$$

If $(a + 1/a) = 4$ find the value of $(a^5 + 1/a^5)$.

यदि $(a + 1/a) = 4$ है, तो $(a^5 + 1/a^5)$ का मान ज्ञात कीजिए।

RRB NTPC-Graduate CBT-1, 16/03/2026, (Shift-III)

A) 776

B) 709

☒ C) 724

D) 770

$$a + \frac{1}{a} = k$$

$$a^5 + \frac{1}{a^5} = (a^2 + \frac{1}{a^2})(a^3 + \frac{1}{a^3})$$

$$= 14 \times 52 - 4$$

$$= 724$$

$$x^3 + y^3 + z^3 - 3xyz = 10 \times [10^2 - 3 \times 31]$$

$$x^3 + y^3 + z^3 = 10 \times 7 + 3 \times 30$$

$$= 70 + 90 = 160$$

$$2(x^3 + y^3 + z^3) = 2 \times 160$$

$$= 320$$

If $x + y + z = 10$, $x^2 + y^2 + z^2 = 38$, $5xyz = 150$ and $(xy + yz + zx) = 31$ find the value of $2(x^3 + y^3 + z^3)$ 30

यदि $x + y + z = 10$, $x^2 + y^2 + z^2 = 38$, $5xyz = 150$ और $(xy + yz + zx) = 31$ है, तो $2(x^3 + y^3 + z^3)$ का मान ज्ञात कीजिए।

RRB NTPC Graduate CBT-1, 19/03/2026, (Shift -1)

- A) 520
- B) 160
- C) 260
- ☒ D) 320

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)[(x + y + z)^2 - 3(xy + yz + zx)]$$

$$5xyz = 150$$

$$xyz = 30$$

If $x + y + z = 10$ $x^2 + y^2 + z^2 = 38$ $5xyz = 150$ and $(xy + yz + zx) = 31$ find the value of $2(x^3 + y^3 + z^3)$

यदि $x + y + z = 10$ $x^2 + y^2 + z^2 = 38$ $5xyz = 150$ और $(xy + yz + zx) = 31$ है, तो $2(x^3 + y^3 + z^3)$ का मान ज्ञात कीजिए।

RRB NTPC Graduate CBT-1, 19/03/2026, (Shift -1)

- A) 520
- B) 160
- C) 260
- D) 320

$$\text{If } a+b+c=0$$

$$a^3+b^3+c^3=3abc$$

$$\frac{1}{14} + \frac{1}{14} - \frac{1}{7} = 0$$

$$a^3+b^3+c^3=3abc$$

$$= 3 \times \frac{1}{14} \times \frac{1}{14} \times -\frac{1}{7}$$

$$= -\frac{3}{1872}$$

If $a = 1/14$ $b = 1/14$ and $c = -1/7$, then find the value of $a^3 + b^3 + c^3$

यदि $a = 1/14$ $b = 1/14$ और $c = -1/7$ है, तो $a^3 + b^3 + c^3$ का मान ज्ञात

RRB-NTPC-Graduate, CBT-1, 18/03/2026, (Shift-II)

(A) 3/1372

(B) 1/1372

☒ (C) -3/1372

(D) -1/1372

Qb α, β are roots

$$\text{Eq} \Rightarrow x^2 - (\alpha + \beta)x + \alpha \cdot \beta = 0$$

$$x^2 - 1x - 6 = 0$$

Which of the following quadratic equations has roots 3 and -2?

निम्न में से वह द्विघात समीकरण कौन-सा है, जिसके मूल 3 और -2 हैं?

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☒ A) $x^2 - x - 6 = 0$

B) $x^2 - x + 6 = 0$

C) $x^2 + x - 6 = 0$

D) $x^2 + x + 6 = 0$

$$2x + y - 3z = -4$$

$$2 \times 2 + 1 - 3 \times 3 =$$

$$4 + 1 - 9 = \underline{\underline{-4}}$$

Solve the following system of 3 equations with 3 unknowns.

3 चरों वाले, निम्नलिखित 3 समीकरणों के निकाय को हल कीजिए।

$$2x + y - 3z = -4$$

$$4x - 2y + z = 9$$

$$3x + 5y - 2z = 5$$

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✓ ~~A) $x = 2$ $y = 1$ $z = 3$~~

B) $x = -2$ $y = 1$ $z = 3$

C) $x = 2$ $y = -1$ $z = -3$

D) $x = -2$ $y = -1$ $z = 3$



Solve the following system of linear equations:

निम्नलिखित रैखिक समीकरणों के निकाय का न
कीजिए।

$$u + v + w = 2$$

$$6u + 4v + 5w = 31$$

$$5u + 2v + 2w = 13$$

RRB NTPC Graduate CBT-1, 22/03/2026(S

A) $u = 1, v = 15, w = -14$

B) $u = 3, v = -18, w = 17$

C) $u = 1, v = 18, w = -17$

D) $u = 3, v = -15, w = 14$

$$x + \frac{1}{x} = 42$$

$$x^3 + \frac{1}{x^3} = 42^3 - 3 \times 42$$

$$8 - 6 = 2$$

If $x + \frac{1}{x} = 42$ then find the value of $x^3 + \frac{1}{x^3}$.

यदि $x + \frac{1}{x} = 42$ है, तो $x^3 + \frac{1}{x^3}$ का मान ज्ञात कीजिए।

Group D 2022

- (a) 72,629
- (b) 74,130
- ☒ (c) 73,962
- (d) 74,926

Q. $\frac{1^3 + 2^3 + 7^3 - 3 \times 1 \times 2 \times 7}{1 + 8 + 3 - 2}$

$$\frac{1 + 8 + 3 - 2}{2 - 2} = \frac{0}{0}$$

If $x = 5.51$, $y = 5.52$ and $z = 5.57$ then what is the value of $x^3 + y^3 + z^3 - 3xyz$?

यदि $x = 5.51$, $y = 5.52$ और $z = 5.57$ है, तो $x^3 + y^3 + z^3 - 3xyz$ का मान क्या है?

(CPO 2019 PRE)

(a) 5.146 X

(b) 51.46 X

☒ (c) 0.05146

(d) 0.5146 X

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