CGL CHSL 2021

MATHS

60 दिन 60 मैराथन

08:30 PM

Algebra 3

1 सेकेंड वाले सवाल

18/60

Target 50/50

ADITYA RANJAN
CGL TOPPER

अब तो OFFICER बन के रहेंगे

- ✓ CHAPTERWISE
- ✓ MOCK TEST
- ✓ LATEST QUESTIONS ASKED BY TCS IN VARIOUS EXAMS
- ✓ DIVIDED ON DIFFERENT LEVELS.

अपनी मंज़िल को भुला कर जिया तो क्या जिया

है दम तुझमे तो उसे पा के दिखा

लिखे दे खून से अपने कामयाबी की कहानी

और बोल उस किस्मत को है दम तो मिटा के दिखा

Algebra -3

(बीजगणित)

$$* \quad a^3 + b^3 = (a+b)(a^2 + b^2 - ab)$$

$$= (a+b)((a+b)^2 - 3ab)$$

$$* \quad a^3 - b^3 = (a-b)(a^2 + b^2 + ab)$$

$$= (a-b)((a-b)^2 + 3ab)$$

$a^3+b^3 = (a+b)\left[(a+b)^2-3ab\right)$

$= 6\,(36-24)$

$= 6 \times 12$

$= 72$

If $(a + b) = 6$ and $ab = 8$, then $(a^3 + b^3)$ is equal to :

SSC CGL 12 June 2019 (Morning)

(a) 216 **(b) 108**

(c) 144 **(d) 72**

$p^3+q^3=(p+q)\left[(p+q)^2-3pq\right]$

$=7\left[49-15\right]$

$=7\times 34$

$=238$

If $p + q = 7$ and $pq = 5$, then the value of $p^3 + q^3$ is :

SSC CGL 9 March 2020 (Evening)

(a) 34

(b) 238

(c) 448

(d) 64

$a^3 - b^3 = (a-b)[(a-b)^2 + 3ab]$

$= 4[16 + 6]$

$= 88$

If $(a - b) = 4$ and $ab = 2$, then $(a^3 - b^3)$ is equal to :

SSC CGL 13 June 2019 (Morning)

(a) 92
(b) 88
(c) 84
(d) 80

9 - 5 9 x 5

If $a - b = 4$ and $ab = 45$ then $(a^3 - b^3)$ is

(a) 208 **(b) 604**

(c) 316 **(d) 614**

$9^3 - 5^3$

$729 - 125$

$= 604$

$a^3-b^3=(a-b)((a-b)^2+3ab)$

$= 5(25+18)$

$= 5 \times 43$

$= 215$

If $(a - b) = 5$ and $ab = 6$, then $(a^3 - b^3)$ is equal to :

SSC CGL 13 June 2019 (Afternoon)

(a) 225 (b) 155

(c) 90 (d) 215

$a^3+b^3 = (a+b)[(a+b)^2-3ab]$

$405 = 9[81-3ab]$

45

$\Rightarrow 45 = 81-3ab$

$\Rightarrow 3ab = 36$ 12

$ab = 12$

If $a^3 + b^3 = 405$ and $a + b = 9$, then the value of ab is:

यदि $a^3 + b^3 = 405$ और $a + b = 9$ है, तो ab का मान ज्ञात करें।

SSC CGL 2020

(a) 15

(b) 10

(c) 12

(d) 8

$x^3+y^3 = (x+y)((x+y)^2-3xy)$

$= 2\left(4 - \frac{3 \times 5}{3}\right)$

$= 2\left(4 - \frac{5}{3}\right)$

$= 2 \times \frac{7}{3} = \frac{14}{3}$

If x + y = 2 and 1/x + 1/y = 18/5, then the value of $(x^3 + y^3)$ is:

$xy = \frac{5}{9}$

यदि x + y = 2 और 1/x + 1/y = 18/5 है, तो $(x^3 + y^3)$ का मान ज्ञात करें।

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(a) $4\frac{2}{3}$

(b) $4\frac{3}{5}$

(c) $3\frac{1}{3}$

(d) $3\frac{1}{5}$

$$(x^4+x^2y^2+y^4) = (x^2+xy+y^2)(x^2-xy+y^2)$$

91 $\qquad$ 13 x 7

Golden Concept

(a) $xy = 3$

(b) $x^2+y^2 = 10$

(c) $\frac{1}{x^2}+\frac{1}{y^2} = \frac{x^2+y^2}{xy} = \frac{10}{3}$

$xy = \frac{8}{2} = 4$

If $x^4 + x^2y^2 + y^4 = 273$ and $x^2 - xy + y^2 = 13$, then the value of xy is :

SSC CGL 5 March 2020 (Afternoon)

(a) 4 **(b) 8**

(c) 10 **(d) 6**

$(x^4 + x^2y^2 + y^4) = (x^2 + y^2 + xy)(x^2 + y^2 - xy)$

$273 = 21 \times 13$

If $a^4 + a^2b^2 + b^4 = 10$, $a^2 + ab + b^2 = 5$ find ab = ?

(a) 4.5 (b) 1.5

(c) 3.5 (d) 2.5

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

$10 = 5 \times x$ (2)

$ab = \frac{5-2}{2} = 1.5$

$x^2 + y^2 + xy = 3$

If $x^4 + y^4 + x^2y^2 = 21$ and $x^2 + y^2 - xy = 7$, then what is the value of $x/y + y/x$?

यदि $x^4 + y^4 + x^2y^2 = 21$ और $x^2 + y^2 - xy = 7$ है, तो $x/y + y/x$ का मान ज्ञात करें।

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(a) $\frac{3}{4}$

(b) $-\frac{3}{4}$

(c) $-\frac{5}{2}$

(d) $\frac{5}{4}$

$\frac{x}{y} + \frac{y}{x}$

$= \frac{x^2+y^2}{xy}$

$= \frac{-5}{-2} = -\frac{5}{2}$

$x^2 - xy + y^2 = 7$

$-2xy = -4$ 2

$-xy = 2$

If $x^4 + x^2y^2 + y^4 = 21$ and $x^2 + xy + y^2 = 3$, then what is the value of $(-xy)$?

यदि $x^4 + x^2y^2 + y^4 = 21$ और $x^2 + xy + y^2 = 3$ है, तो $(-x\,y)$ का मान ज्ञात करें।

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(a) 2

(b) 1

(c) –1

(d) –2

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

$a^2+b^2+ab=13$

If $a^4 + b^4 + a^2b^2 = 273$ and $a^2 + b^2 - ab = 21$,

then one of the values of $\left(\frac{1}{a}+\frac{1}{b}\right)$ is:

यदि $a^4 + b^4 + a^2b^2 = 273$ और $a^2 + b^2 - ab = 21$

है, तो $\left(\frac{1}{a}+\frac{1}{b}\right)$ का एक मान ज्ञात करें।

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(a) $-\frac{9}{4}$

(b) $-\frac{3}{4}$

(c) $\frac{9}{8}$

(d) $\frac{3}{2}$

$\frac{273}{13} = x \times 21$

$\frac{1}{a}+\frac{1}{b} = \frac{a+b}{ab} = \frac{3}{-4}$

$* \quad (a+b)^2 = a^2+b^2+2ab$

$= 17-8$

$(a+b)^2 = 9$

$(a+b) = 3$

$$a^3 + b^3 = (a+b)(a^2 + b^2 - ab)$$

$$\frac{a^3 - b^3}{(a-b)} = (a^2 + b^2 + ab)$$

$(a^3 - b^3) \div (a - b) = 5x^2 \quad 27y^2$

→ If $\left(5\sqrt{5}x^3 - 81\sqrt{3}y^3\right) \div \left(\sqrt{5}x - 3\sqrt{3}y\right) = Ax^2 + By^2 +$ $3\sqrt{15}xy$ Cxy, then the value of $(6A + B - \sqrt{15C})$ is :

SSC CGL 4 June 2019 (Morning)

(a) 10 (b) 9

(c) 15 (d) 12

$6A + B - \sqrt{15}C$

$= 30 + 27 - \sqrt{15} \times 3\sqrt{15}$

$= 57 - 45$

$= 12$

* $(a^3 - b^3) \div (a - b) = \boxed{(a^2 + b^2 + ab)}$

* $(a^3 + b^3) \div (a + b) = (a^2 + b^2 - ab)$

$2A - 3B - 2\sqrt{6}C$

$= 16 - 81 - 2\sqrt{6} \times (-6\sqrt{6})$

$= 16 - 81 + 72$

$= 7$

$A = 8$

$B = 27$

$C = -6\sqrt{6}$

If $(16\sqrt{2}x^3 + 81\sqrt{3}y^3) \div (2\sqrt{2}x + 3\sqrt{3}y) = Ax^2 + By^2 + Cxy$, then find the value of $2A - 3B - 2\sqrt{6}C$.

यदि $(16\sqrt{2}x^3 + 81\sqrt{3}y^3) \div (2\sqrt{2}x + 3\sqrt{3}y) = Ax^2 + By^2 + Cxy$ है, तो $2A - 3B - 2\sqrt{6}C$ का मान ज्ञात करें

SSC CGL 2020

(a) 25

(b) 79

(c) 137

(d) 7

If $3\sqrt{3}x^3 - 2\sqrt{2}y^3 = (\sqrt{3}x - \sqrt{2}y)(Ax^2 - Bxy + Cy^2)$, then the value of $(A^2 - B^2 + C^2)$ is :

SSC CHSL 2 July 2019 (Morning)

(a) 10 (b) 17

(c) 7 (d) 1

$Ax^2 = 3x^2$

$Cy^2 = 2y^2$

$-Bxy = \sqrt{6}xy$

$B = -\sqrt{6}$

$A^2 - B^2 + C^2$

$= 9 - 6 + 4$

$= 7$

$(a^3 - b^3) = (a-b)(a^2 + b^2 + ab)$

$A = \sqrt{5}$

$B = 5$

$C = -\sqrt{10}$

$5 + 25 - 10$

$= 20$

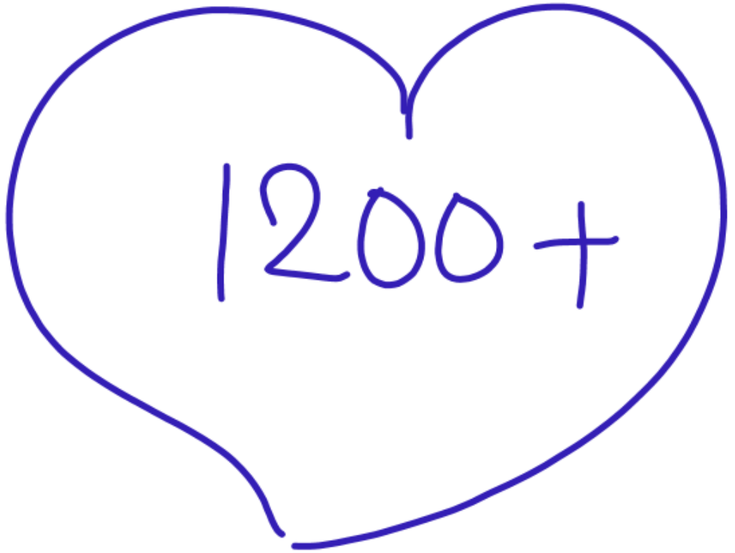
If $5\sqrt{5}x^3 + 2\sqrt{2}y^3 = (\sqrt{5}x + \sqrt{2}y)(5x^2 + 2y^2 - \sqrt{10}xy)$, **then the value of** $(A^2 + B^2 - C^2)$ **is**

CGL Tier II (13 September 2019)

(a) 15 (b) 20

(c) 30 (d) 40

$(a^3 + b^3) = (a+b)(a^2 + b^2 - ab)$


1200+

If $x + y + z = 2$ and $xy + yz + zx = 11$, then the value of $x^3 + y^3 + z^3 - 3xyz$ is :

SSC CGL 6 June 2019 (Morning)

(a) ~~152~~ -58 **(b) 70**

(c) 148 **(d) 74**

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

$= 2(4-33)$

$= -58$

$9+6+4$

If $x + y + z = 19$ and $xy + yz + zx = 114$, then the value of $\sqrt{x^3 + y^3 + z^3 - 3xyz}$ is :

SSC CGL 4 June 2019 (Afternoon)

(a) 21 (b) 17

~~(c)~~ 19 (d) 13

$= \sqrt{19(19^2 - 3 \times 114)}$

$= \sqrt{19(361 - 342)}$

$= \sqrt{19 \times 19} = 19$

If $a + b + c = 8$ and $ab + bc + ca = 12$, then the value of $a^3 + b^3 + c^3 - 3abc$ is :

SSC CGL 7 June 2019 (Morning)

(a) 192 **(b) 224**

(c) 144 **(d) 400**

$$a^3+b^3+c^3-3abc = (a+b+c)\left((a+b+c)^2-3(ab+bc+ca)\right)$$

$$= 8\left(8^2-3\times 12\right)$$

$$= 8(64-36)$$

$$= 8\times 28$$

$$= 224$$

m.Imp
***

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

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

$$= \frac{(x+y+z)}{2}\left[(x-y)^2+(y-z)^2+(z-x)^2\right]$$

$x^3+y^3+z^3-3xyz$

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

$=2(4-3(-11))$

$=2(37)$

$=74$

$xy+yz+zx=-11$

x + y + z = 2 and ~~xy + zx = – 11~~, then the value of $x^3 + y^3 + z^3 – 3xyz$ is:

यदि x + y + z = 2 और xy + zx = – 11 है, तो $x^3 + y^3 + z^3 – 3xyz$ मान ज्ञात करें।

SSC CGL 2020

(a) 78

(b) 69

(c) 74

(d) 71

$* \quad (a+b+c)^2 = a^2+b^2+c^2+2(ab+bc+ac)$

$7^2 = 85+2k$

$49-85 = 2k$

$-36 = 2k$

$k = -18$

If $x + y + z = 7$, $x^2 + y^2 + z^2 = 85$ and $x^3 + y^3 + z^3 = 913$, then the value of $\sqrt[3]{xyz}$ is:

यदि $x + y + z = 7$, $x^2 + y^2 + z^2 = 85$ और $x^3 + y^3 + z^3 = 913$ है, तो $\sqrt[3]{xyz}$ का मान ज्ञात करें।

SSC CGL 2020

(a) 4
(b) 2
(c) 1
(d) 8

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

913 — 7 — 85 — −18

$913 - 3xyz = 7(85+18)$

$\Rightarrow 913 - 3xyz = 7 \times 103$

$\Rightarrow 913 - 721 = 3xyz$

$\Rightarrow 192 = 3xyz$

$\Rightarrow 64 = xyz$

$\therefore$

If $x + y + z = 1$, $xy + yz + zx = xyz = -4$, then what is the value of $(x^3 + y^3 + z^3)$?

यदि $x + y + z = 1$, $xy + yz + zx = xyz = -4$ है, तो $(x^3 + y^3 + z^3)$ का मान ज्ञात करें।

SSC CGL 2020

(a) -1

(b) -8

(c) 1

(d) 8

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SSC Exams

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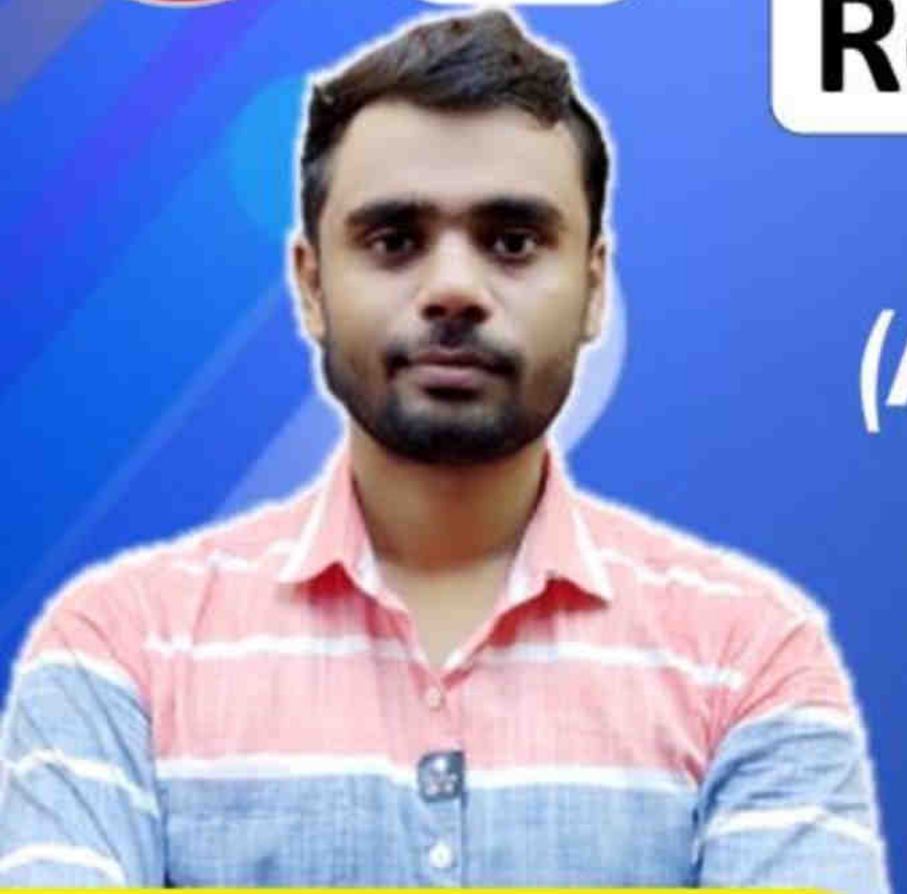

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(MATHS EXPERT)


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