Let a, b, c, d, e be real nos (वास्तविक संख्याएं)

$\rightarrow ( )^2 = +ve$

~~$4 + 1 + (-5)$~~

and $a^2 + b^2 + c^2 + d^2 + e^2 = 0$

then $a = b = c = d = e = 0$

coaching center

292. If $(x-3)^2 + (y-5)^2 + (z-4)^2 = 0$ then the value of $\frac{x^2}{9} + \frac{y^2}{25} + \frac{z^2}{16}$

अगर $(x-3)^2 + (y-5)^2 + (z-4)^2 = 0$ है तो $\frac{x^2}{9} + \frac{y^2}{25} + \frac{z^2}{16}$:

a) 12   b) 9   c) 3   d) 1

$x - 3 = 0 \implies x = 3$

$y - 5 = 0 \implies y = 5$

$z - 4 = 0 \implies z = 4$

$1 + 1 + 1 = 3$

2

293. If $(a-3)^2 + (b-4)^2 + (c-9)^2 = 0,$ then the value of $\sqrt{a+b+c}$ is:

अगर $(a-3)^2 + (b-4)^2 + (c-9)^2 = 0$ है तो $\sqrt{a+b+c}$ का मान:

a) -5　　　　b) 4　　　　c) ± 4　　　　d) -4

$a = 3$

$b = 4$

$c = 9$

$\sqrt{16} = 4$

3

$$a^2 = 16$$

a का square 16 है

$$(-4)^2 = 16$$
$$(+4)^2 = 16$$

$$a = +4 / -4$$

$$a = \sqrt{16}$$ → bigger

$a =$ the principle root of 16

$$a = +4 \; \boxed{-4} \;\; \times$$

$$a^2 = 16 \rightarrow a = +4, -4$$

$$a = \sqrt{16}$$
$$a^2 = 16$$

4

$a = 16$

$a^2 = 16 \longrightarrow$ 2 values

$a^3 = 64 \longrightarrow$ 3 values

$a = 4, (\ \ ), (\ \ )$

$a^3 - 64 = 0$

$a^3 - 4^3 = 0$

$(a-4)(a^2 + 4a + 16) = 0$ $\longrightarrow$ 2 Values

$a^1 = \sqrt{16} \longrightarrow$ 1 value

$a^2 = 16 \longrightarrow$ 2 values

If $(3a + 1)^2 + (b - 1)^2 + (2c - 3)^2 = 0$, then the value of $(3a + b + 2c)$is equal to

अगर $(3a + 1)^2 + (b - 1)^2 + (2c - 3)^2 = 0$ है तो $(3a + b + 2c)$:

a) 3   b) -1   c) 2   d) 5

$$a = -\frac{1}{3}$$

$$b = 1$$

$$c = \frac{3}{2}$$

$$1 + 1 + 3 = 5$$

coaching center

295. If $(2a - 1)^2 + (4b - 3)^2 + (4c + 5)^2 = 0$ then the value of

$\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2}$ is

अगर $(2a - 1)^2 + (4b - 3)^2 + (4c + 5)^2 = 0$ है तो $\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2}$:

a) $\frac{27}{8}$　　　b) $\frac{19}{8}$　　　c) 0　　　d) $\frac{11}{8}$

$a = \frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$

$b = \frac{3}{4}$

$c = -\frac{5}{4}$

$0 = \frac{(a+b+c)(a^2+b^2+c^2-ab-bc-ca)}{a^2+b^2+c^2}$

296. If $(x + y - z - 1)^2 + (z + x - y - 2)^2 + (z + y - x - 4)^2 = 0$, then find $x + y + z = $?

यदि $(x + y - z - 1)^2 + (z + x - y - 2)^2 + (z + y - x - 4)^2 = 0$ है तो $x + y + z$ का मान ज्ञात करो |

a) 3   b) 7   c) 5   d) 4

$$x + y - z = 1$$
$$z + x - y = 2$$
$$z + y - x = 4$$
$$\overline{}$$
$$x + y + z = 7$$

297. If the value of $(a + b - 2)^2 + (b + c - 5)^2 + (c + a - 5)^2 = 0$, then the value of $\sqrt{(b + c)^a + (c + a)^b - 1}$ is:

यदि $(a + b - 2)^2 + (b + c - 5)^2 + (c + a - 5)^2 = 0$, तो $\sqrt{(b + c)^a + (c + a)^b - 1}$ का मान है:

a) 2   b) 1

c) 3   d) 0

$a + b = 2$

$b + c = 5$

$c + a = 5$

___

$2(a + b + c) = 12 = 6$

$\sqrt{5^1 + 5^1 - 1} = 3$

298. If $x^2 + y^2 - 4x - 4y + 8 = 0$, then the value of $x - y$ is

अगर $x^2 + y^2 - 4x - 4y + 8 = 0$ है तो $x - y$ पता करें|

a) 4   b) -4   c) 0   d) 8

$2 \times 2 \times 2$

4 4

$2 - 2$

$(x-2)^2 + (y-2)^2 = 0$

$x = 2$

$y = 2$

299. If $x^2 + y^2 + 2x + 1 = 0$, then the value of $x^{31} + y^{35}$ is

अगर $x^2 + y^2 + 2x + 1 = 0$ हैं तो $x^{31} + y^{35}$ पता करें|

a) -1   b) 0   c) 1   d) 2

$2 \cdot x \cdot 1$

$-1 + 0 = -1$

$$(x+1)^2 + (y)^2 = 0$$

$x = -1$

$y = 0$

SSC CGL T2, 1 Dec 2016

300. **If $a^2 + b^2 = 4b + 6a - 13$, then what is the value of $a + b$?**

यदि $a^2 + b^2 = 4b + 6a - 13$ है, तो $a + b$ का मान क्या है?

a) 3   b) 2   c) 5   d) 10

$$a^2 + b^2 - 4b - 6a + 13 = 0$$

$$2 \cdot a \cdot 3$$

$$9 \quad 4$$

$$(a-3)^2 + (b-2)^2 = 0$$

$$\Rightarrow a = 3$$

$$b = 2$$

301. If $x^2 + y^2 + 6x + 5 = 4(x - y)$ then x − y is

यदि $x^2 + y^2 + \underline{6x} + 5 = 4(x - y)$ हो, तो x − y क्या होगा ?

a) 1   b) − 1   c) 3   d) -3

$$x^2 + 2x + y^2 + 4y + 5 = 0$$

$$2x \cdot 1$$

$$-1 - (-2) = 1$$

$$\boxed{1}$$

$$(x+1)^2 + (y+2)^2 = 0$$

$$x = -1$$

$$y = -2$$

302. If $2x^2 + y^2 + 6x - 2xy + 9 = 0$, then the value of $(4x^3 - y^3 + x^2y^2)$ is:

यदि $2x^2 + y^2 + 6x - 2xy + 9 = 0$ है, तो $(4x^3 - x^3 + x^2y^2)$ का मान है:

a) 9   b) 0   c) -9   d) -3

x^2 x^2

$2 \cdot y \cdot x$

x^4

$3x^3 + x^4$

$-81 + 81 = 0$

$(y-x)^2 + (x+3)^2 = 0$

$y = x$ $x = -3$

$y = -3$

1 बार Counter भूलोगे

303. If $5x^2 + 4xy + y^2 + 2x + 1 = 0$ then find the value of $x - y$.

यदि $5x^2 + 4xy + y^2 + 2x + 1 = 0$ है, तो $x - y$ का मान ज्ञात करो |

a) -1 b) -3 c) 3   d) 1

$-1 - 2 = -3$

$4x^2$ x^2 $2 \cdot y \cdot 2x$

$(2x+y)^2 + (x+1)^2 = 0$
$\;\;\;\; \ge 0 \qquad\quad \ge 0$

$-2x = y \qquad x = -1$

$2 = y$

15

304. If $x^2 + 8y^2 + 12y - 4xy + 9 = 0$, then the value of $(7x + 8y)$ is:

$2 \cdot x \cdot 2y$

यदि $x^2 + 8y^2 + 12y - 4xy + 9 = 0$ है, तो $(7x + 8y)$ का मान ज्ञात करें|

a) -33 b) 9 c) 33 d) -9

$4y^2$ $4y^2$

पढ़ने →

$$(x - 2y)^2 + (2y + 3)^2 = 0$$

$x = 2y$

$y = -\dfrac{3}{2}$

$x = -3$

$-21 - 12 = -33$

305. $a^2 + b^2 + c^2 = 2(a + 2b + 3c) - 14$, then the value of $4a - 3b + 5c$ is

$a^2 + b^2 + c^2 = 2(a + 2b + 3c) - 14$, तो $4a - 3b + 5c$ का मान:

a) 12   b) 13   c) 15   d) None

$2a + 4b + 6c$

$a = \dfrac{1}{1} = 1$

$b = \dfrac{2}{1} = 2$

$c = \dfrac{3}{1} = 3$

$4 - 6 + 15$

$= 13$

$(a \pm b)^2$

$= a^2 \boxed{\pm 2ab} + b^2$

LHS   RHS   X

$a = \dfrac{\frac{1}{2} \times \text{Coeff of } a}{\text{Coeff of } a^2}$

17

306. If $a^2 + 4b^2 + 49c^2 + 18 = 2(2b + 28c - a)$, then $(3a + 2b + 7c)$ is :

अगर $a^2 + 4b^2 + 49c^2 + 18 = 2(2b + 28c - a)$, तो $(3a + 2b + 7c) =$?

a) 0 b) 2 c) 1 d) 3

$$a = \frac{-1}{1} = -1$$

$$b = \frac{2}{4} = \frac{1}{2}$$

$$c = \frac{28}{49} = \frac{4}{7}$$

$$-3 + 1 + 4 = 2$$

18

307. If $a^2 + b^2 + c^2 + 96 = 8(a + b - 2c)$, then $\sqrt{ab - bc + ca}$ is equal to:

यदि $a^2 + b^2 + c^2 + 96 = 8(a + b - 2c)$ तो $\sqrt{ab - bc + ca}$ निम्न में से किसके बराबर है?

a) 6   b) $2\sqrt{2}$ c) 4   d) $2\sqrt{3}$

$$\sqrt{16 + 32 - 32} = 4$$

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

$$b = \frac{4}{1} = 4$$

$$c = \frac{-8}{1} = -8$$

308. If $9a^2 + 4b^2 + c^2 + 21 = 4(3a + b - 2c)$, then the value of $(9a + 4b - c)$ is:

यदि $9a^2 + 4b^2 + c^2 + 21 = 4(3a + b - 2c)$, तो $(9a + 4b - c)$ का मान है:

a) 16 b) 2 c) 6 d) 12

$6 + 2 + 4$

$$a = \frac{6}{9} = \frac{2}{3}$$

$$b = \frac{2}{4} = \frac{1}{2}$$

$$c = \frac{-4}{1} = -4$$

309. If $x^2 + 4y^2 + 3z^2 + \frac{19}{4} = 2\sqrt{3}\,(x + y + z)$, then the value of $(x - 4y + 3z)$ is:

यदि $x^2 + 4y^2 + 3z^2 + \frac{19}{4} = 2\sqrt{3}\,(x + y + z)$ है, तो $(x - 4y + 3z)$ का मान ज्ञात करें।

a) $\frac{\sqrt{3}}{3}$ b) $2\sqrt{3}$ c) $\sqrt{3}$ d) $\frac{\sqrt{3}}{2}$

$$x = \frac{\sqrt{3}}{1} = \sqrt{3}$$

$$y = \frac{\sqrt{3}}{4}$$

$$z = \frac{\sqrt{3}}{3} = \frac{1}{\sqrt{3}}$$

$$\sqrt{3} - \sqrt{3} + \sqrt{3}$$

310. If $9a^2 + 16b^2 + c^2 + 25 = 24(a+b)$, then $(3a + 4b + 5c) =$?

यदि $9a^2 + 16b^2 + c^2 + 25 = 24(a+b)$ है, तो $(3a + 4b + 5c) =$?

a) 9   b) 6   c) 7   d) 10

$$24(a + b + 0 \cdot c)$$

$$a = \frac{12}{9} = \frac{4}{3}$$

$$b = \frac{12}{16} = \frac{3}{4}$$

$$c = 0$$

$$4 + 3 + 0$$

311. If $a^2 + b^2 + 64c^2 + 16c + 3 = 2(a + b)$, then $4a^7 + b^7 + 8c^2 =$?

यदि $a^2 + b^2 + 64c^2 + 16c + 3 = 2(a + b)$ है, तो $4a^7 + b^7 + 8c^2 =$?

a) $4\frac{1}{8}$ b) $4\frac{7}{8}$ c) $5\frac{1}{8}$ d) $3\frac{7}{8}$

$2(a + b - 8c)$

$a = 1$

$b = 1$

$c = \frac{-8}{64} = \frac{-1}{8}$

$4 + 1 + \frac{1}{8}$

23

32. If $a^2 + c^2 + 17 = 2(a - 8b - 2b^2)$, then what is the value of $(a^3 + b^3 + c^3)$?

यदि $a^2 + c^2 + 17 = 2(a - 8b - 2b^2)$ है, तो $(a^3 + b^3 + c^3)$ का मान ज्ञात करें।

a) -7 b) 9   c) 10   d) -4

$$a^2 + c^2 + 4b^2 + 17 = 2(a - 8b)$$

$$1 - 8 + 0$$

$$a = 1$$

$$b = -\frac{8}{4} = -2$$

$$c = 0$$

313. If $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} + 4 = 0$, then $x^2 + y^2 = ?$

अगर $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} + 4 = 0$ है तो $x^2 + y^2 = ?$

$-1 - 1 = -2$

a) 2   b) 4   c) -2   d) -4

2   2

$$\left(x + \frac{1}{x}\right)^2 + \left(y + \frac{1}{y}\right)^2 = 0$$

$x + \frac{1}{x} = 0$

$\Rightarrow x = -\frac{1}{x}$

$\Rightarrow x^2 = -1$

$y = -\frac{1}{y}$

$y^2 = -1$

314. If $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} = 0$, then the value of $x^2 + y^2$ is:

यदि $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} = 0$ है, तो $x^2 + y^2$ का मान ज्ञात करें |

$-1 + 1$

a) 0   b) 4 $+2 -2$ c) 8   d) 16

$$\left(x + \frac{1}{x}\right)^2 + \left(y - \frac{1}{y}\right)^2 = 0$$

$x = -\frac{1}{x}$ $y = \frac{1}{y}$

$x^2 = -1$ $y^2 = 1$

26

If $a^2 + 4b^2 + \frac{1}{4a^2} + \frac{1}{b^2} = 5$, then the value of $a^2 + b^2$ will be

यदि $a^2 + 4b^2 + \frac{1}{4a^2} + \frac{1}{b^2} = 5$ है, तो $a^2 + b^2$ का मान होगा :

a) 1   b) -1   c) 2   d) $2\frac{1}{2}$

$2 \cdot a \times \frac{1}{2a} = 1$

$2 \cdot 2b \cdot \frac{1}{b} = 4$

$\left(-1\right) \quad \left(-4\right)$

$\left(a - \frac{1}{2a}\right)^2 + \left(2b - \frac{1}{b}\right)^2 = 0$

$a = \frac{1}{2a} \qquad 2b = \frac{1}{b}$

$\Rightarrow a^2 = \frac{1}{2} \qquad b^2 = \frac{1}{2}$

27

316. If $a^4 + 1 = \left[\dfrac{a^2}{b^2}\right](4b^2 - b^4 - 1)$, then what is the value of $a^4 + b^4$?

यदि $a^4 + 1 = \left[\dfrac{a^2}{b^2}\right](4b^2 - b^4 - 1)$ है, तो $a^4 + b^4$ का मान क्या है?

a) 2   b) 16   c) 32   d) 64

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

$$\Rightarrow \left(a^2 + \frac{1}{a^2}\right) + b^2 + \frac{1}{b^2} - 4 = 0$$

$$-2 \quad -2$$

$$\left(a - \frac{1}{a}\right)^2 + \left(b - \frac{1}{b}\right)^2 = 0$$

$$a = \frac{1}{a} \qquad b = \frac{1}{b}$$

$$a^2 = 1 \qquad b^2 = 1$$

317. If $\left(x^3 + \frac{1}{x^3} - k\right)^2 + \left(x + \frac{1}{x} - p\right)^2 = 0$ where k and p are real number and $x \neq 0$, then $\frac{k}{p}$ is equal to :

यदि $\left(x^3 + \frac{1}{x^3} - k\right)^2 + \left(x + \frac{1}{x} - p\right)^2 = 0$ जहाँ k और p वास्तविक संख्याएँ हैं और $x \neq 0$ है तो $\frac{k}{p}$ का मान बराबर है :

a) $p^2 + 1$ b) $p^2 + 3$ c) $p^2 - 1$ d) $p^2 - 3$

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

$$P^3 - 3p = k \qquad \Rightarrow x^3 + \frac{1}{x^3} = P^3 - 3P$$

$$P^2 - 3 = \frac{k}{P}$$