

मिशन CTET / STET 2023



MATHS

बीजगणित (ALGEBRA)

पिछली परीक्षा में पूछे गए प्रश्नों के आधार पर

CTET / STET की सभी परीक्षाओं हेतु उपयोगी

हमारे **TOPIC EXPERT** के साथ

BY MATHS GURU



LIVE

06:00 PM



Q. व्यंजक $(x^2-2xy+y^2)-z^2$ के गुणनखण्ड हैं-

Q. The factors of the expression $(x^2-2xy+y^2)-z^2$ are-

$$(x^2+y^2-2xy) - z^2$$

$$\Rightarrow \underbrace{(x-y)^2}_{A} - \underbrace{z^2}_{B}$$

$$\Rightarrow \underbrace{(x-y+z)}_{a+b} \underbrace{(x-y-z)}_{a-b} = (a+b)(a-b)$$

(a) $(x+y-z)$

$(x+y+z)$

(b) $(x-y-z)(x-y+z)$

(c) $(x-y-z)$

$(x+y+z)$

(d) $(x-y-z)$

$(x+y-z)$



Q. K का मान ज्ञात कीजिए जिसके लिए समीकरण $x-Ky=2$, $3x+2y=5$ का अद्वितीय हल हो-

Q. Find the value of K for which the equation $x-Ky=2$, $3x+2y=5$ has a unique solution.

$\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (Unique)
 $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ (Infinite)
 $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ (No Solⁿ)

(a) $K \neq 2/3$
 (b) $K \neq (-2)/3$
 (c) $K = 2/3$
 (d) $K = (-2)/3$



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[CTET]

Q. x का वह मान जो समीकरण $10(x+6)+8(x-3)=5(5x-4)$ को संतुष्ट करता है, वह निम्न समीकरण को भी संतुष्ट करता है-

Q. The value of x which satisfies the equation $10(x+6)+8(x-3)=5(5x-4)$ also satisfies the following equation

$$10(x+6)+8(x-3)=5(5x-4)$$

$$\underline{10x} + \underline{60} + \underline{8x} - \underline{24} = 25x - 20$$

$$\underline{18x} + 36 = \underline{25x} - 20$$

$$7x = 56$$

$$x = 8$$

$3 \times 5 \neq 17$
(a) ~~$3(3x-5)=2x+1$~~

(b) ~~$2(x+3)=5(x-5)+4$~~

(c) $5(x-5)=2(x-3)+5$

(d) ~~$5(x-3)=x+5$~~

Handwritten notes and arrows indicating the solution process and the correct option (c). Includes a circled '5' and '3' in option (d) and a circled '8' in the solution.



Q. $11x-16y+7a$ प्राप्त करने के लिए $5y-13x-8a$ में से क्या घटाना चाहिए?

Q. What must be subtracted from $5y-13x-8a$ to get $11x-16y+7a$?

$$\begin{array}{r} \underline{\underline{5y-13x-8a}} \\ - \underline{\underline{11x+16y-7a}} \\ \hline \end{array}$$

$$21y-24x-15a$$

(a) $21y-5x-a$

(b) $21y-24x-$

$15a$

(c) $24x-$

$21y+a$

(d)

$6x+21y+15$

a



Q. $\frac{(x^2+y^2-z^2)^2 - (x^2-y^2-z^2)^2}{(x+z)(x-z)y^2}$ बराबर है:

Q. $\frac{(x^2+y^2-z^2)^2 - (x^2-y^2-z^2)^2}{(x+z)(x-z)y^2}$ is equal

to:

$\Rightarrow (x^2+y^2-z^2 + x^2-y^2-z^2)$ (a) 2

(b) 4

(c) 1

(d) 0

$\Rightarrow (2x^2 - 2z^2)(2y^2)$

$\Rightarrow 4y^2(x^2 - z^2)$

$\Rightarrow \frac{4y^2(x+z)(x-z)}{(x+z)(x-z)y^2}$
 $\Rightarrow 4$



Q. $x^2 + 3\sqrt{2}x + 4$ के

गुणखण्ड हैं:

Q. The factors of $x^2 + 3\sqrt{2}x + 4$

are: $3\sqrt{2}x + 4$

$$\Rightarrow x^2 + 2\sqrt{2}x + \sqrt{2}x + 4$$

$$\Rightarrow x(x + 2\sqrt{2}) + \sqrt{2}(x + 2\sqrt{2})$$

$$\Rightarrow (x + 2\sqrt{2})(x + \sqrt{2})$$

(a) $(x + 2\sqrt{2})(x - \sqrt{2})$

(b) $(x + 2\sqrt{2})(x + \sqrt{2})$

(c) $(x - 2\sqrt{2})(x - \sqrt{2})$

(d) $(x - 2\sqrt{2})(x + \sqrt{2})$



Q. यदि $x=3+\sqrt{8}$, तो $x^3+(1/x^3)$
का मान है:

Q. If $x=3+\sqrt{8}$, then value of
(x^3+1/x^3) is:

$$\frac{1}{x} = \frac{1}{(3+\sqrt{8})} \times \frac{(3-\sqrt{8})}{(3-\sqrt{8})}$$
$$= \frac{(3-\sqrt{8})}{9-8} = 3-\sqrt{8}$$

(1) 216

(2) 198

(3) 192

(4) 261



Q. यदि $5(3x+4)-8(6x+7)=9x-8$ है, तो (x^2-2x+1) का मान क्या है?

Q. If $5(3x+4)-8(6x+7)=9x-8$, then what is the value of (x^2-2x+1) ?

Handwritten solution:

$$15x + 20 - 48x - 56 = 9x - 8$$

$$-33x - 36 = 9x - 8$$

$$-42x = 28$$

$$x = -\frac{2}{3}$$

$$(x^2 - 2x + 1)$$

$$= \frac{4}{9} - 2\left(-\frac{2}{3}\right) + 1$$

$$= \frac{4}{9} + \frac{4}{3} + 1 = \frac{4+12+9}{9} = \frac{25}{9}$$

(a)

2/3

(b)

4/9

(c) 5/3

(d)

25/9



Q. बहुपद $x^3 - 6x^2 + 11x - 6$ के गुणखण्ड हैं-

Q. The factors of the polynomial $x^3 - 6x^2 + 11x - 6$ are-

$$x^3 - 6x^2 + 11x - 6 = 0$$

$x = 1$

$$x^2(x-1) - 5x(x-1) + 6(x-1)$$

$$\Rightarrow (x-1)(x^2 - 5x + 6)$$

$$\Rightarrow (x-1)(x^2 - 3x - 2x + 6)$$

$$\Rightarrow (x-1)(x(x-3) - 2(x-3))$$

$$\Rightarrow (x-1)(x-3)(x-2)$$

- (a) $(x-1)(x-2)(x-3)$
- (b) $(x+1)(x+2)(x-3)$
- (c) $(x-1)(x+2)(x-3)$
- (d) $(x-1)(x-2)(x+3)$



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Q. यदि $\frac{3x-2}{3} + \frac{2x+3}{2} = x + \frac{7}{6}$ है तो $\frac{5x-2}{4}$ का मान है?

Q. If $\frac{3x-2}{3} + \frac{2x+3}{2} = x + \frac{7}{6}$ then the value of $\frac{5x-2}{4}$?

$$\Rightarrow \frac{6x-4+6x+9}{6} = \frac{6x+7}{6}$$

$$\Rightarrow 12x+5 = 6x+7$$

$$\Rightarrow 36x = 2$$

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

$$\Rightarrow \frac{5x-2}{4}$$

$$\Rightarrow \left(\frac{5}{3} - \frac{2}{1}\right) \times \frac{1}{4}$$

$$\Rightarrow \left(\frac{5}{3} - \frac{2}{1}\right) \times \frac{1}{4}$$

$$\Rightarrow \frac{1}{12}$$

- (a) (-1)/3
- (b) 1/4
- (c) (-1)/12
- (d) 1/12



Q. यदि $3x + \frac{1}{2x} = 5$, तो $3x^2 + (12x^2)^{-1}$ का मान क्या होगा?

Q. If $3x + \frac{1}{2x} = 5$, then what will be the value of

$3x^2 + (12x^2)^{-1}$?

$$\left(3x + \frac{1}{2x}\right) = 5 \quad \left| \quad \left(\frac{3x^2 + \frac{1}{12x^2}}{= ?}\right)$$

$$\left(9x^2 + \frac{1}{4x^2}\right) + 2(3x) \left(\frac{1}{2x}\right) = 25$$

$$\frac{1}{3} \times \left(9x^2 + \frac{1}{4x^2}\right) = (22) \times \frac{1}{3}$$

$$\Rightarrow \left(3x^2 + \frac{1}{12x^2}\right) = \left(\frac{22}{3}\right) = 7\frac{1}{3}$$

- (a) $7 \frac{1}{3}$
- (b) $6 \frac{2}{3}$
- (c) $8 \frac{1}{3}$
- (d) $9 \frac{2}{3}$



Q. $25-p^2-q^2-2pq$ का गुणनखण्ड
कौन

Q. The factorization of $25-p^2-q^2-2pq$ is-

$$\Rightarrow (5)^2 - (p+q)^2$$

$$\Rightarrow (5+p+q)(5-p-q)$$

(a) $(5+p-q)(5-p+q)$

(b) $(5+p-q)(5-p-q)$

(c) $(5+p+q)(5-p+q)$

(d) $(5+p+q)(5-p-q)$



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[CTET]

Q. यदि $\frac{5x-7}{3} + 2 = \frac{4x-3}{4} + 4x$ तो $8x+5$ का मान है:

Q. If $\frac{5x-7}{3} + 2 = \frac{4x-3}{4} + 4x$ then find the value of $8x+5$.

~~Home Work~~



(a) 13

(b) 6

(c) 7

(d) 4

