

Episode No – 7

Telecast date: 04-04-2017

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ALGEBRA

- * The set of all values of x for which $x^2 - 1x + 21 + x < 0$ is
(a) $(-2, \infty)$ (b) $(2, \infty)$ (c) $(-2, +2)$ (d) $(-\infty, 2)$

Ans: C

- * If the expression $x^2 + 2[a+b+c]x + 3[ab+bc+ca]$ is perfect square then
(a) $a \neq b = c$ (b) $a \neq b$ (c) $b \neq c$ (d) $a = b = c$

Ans: D

- * Solution set for $3^{x/2} + 2^x > 25$ is
(a) $\mathbb{R} - \{4\}$ (b) $\mathbb{R}^+ + \{-4\}$ (c) $(4, \infty)$ (d) $(-\infty, 4)$

Ans: D

- * The length of rectangle is 3 times breadth. If minimum perimeter is 160cm, then
(a) $B > 20$ (b) $L < 20$ (c) $B \geq 20$ (d) $L \leq 20$

Ans: C

- * Number of integral values of x satisfying inequality $\left(\frac{3}{4}\right)^{-x^2+10+6x} < \frac{27}{64}$ is
(a) 6 (b) 5 (c) 7 (d) 8

Ans: C

* Let $p, q \in \{1, 2, 3, 4\}$ No. of equations of the form $px^2 + qx + 1 = 0$ having real roots is

- (a) 15 (b) 7 (c) 7 (d) 8

Ans: C

* If sum of roots of the equation $x^2 + px + q = 0$, is equal to sum of their squares then....

- (a) $p + q^2 = 0$ (b) $p^2 + q^2 = 2q$ (c) $p^2 + p = 2q$ (d) $p^2 + p + 2q = 0$

Ans: C

* $ax^2 + bx + c = 0$, is connected by the relation $4a + 2b + c = 0$, $ab > 0$ $a, b, c \in \mathbb{R}$ has Roots

- (a) Rational (b) Irrational (c) Complex Roots (d) Can't say

Ans: A

* The set of values of α for which $(\alpha + 2)x^2 - 2\alpha x - \alpha = 0$ has two roots equidistant from unity is / are

- (a) $[-1, 1]$ (b) $(-1, 1)$ (c) $\{-1, 1\}$ (d) \emptyset

Ans: D

* How many terms are there in the expansion of $(4x + 7y)^{10} + (4x - 7y)^{10}$

- a) 5
b) 6
c) 11
d) 22

Ans: B

* The equation whose roots are twice roots of the equation $x^2 - 3x + 3 = 0$ is

- a) $x^2 + 6x - 12 = 0$
b) $x^2 + 12x - 6 = 0$
c) $x^2 - 6x + 12 = 0$
d) $x^2 - 12x - 6 = 0$

Ans: C

* If a, b, c are in A.P & $(b-c)x^2 + (c-a)x + a-b = 0$ sum of squares of roots is

- a) 1
- b) 2
- c) 3
- d) 4

Ans: B

* Real values of x satisfying $2\left[x^2 + \frac{1}{x^2}\right] - 9\left[x + \frac{1}{x}\right] + 14 = 0$ is

- a) 1
- b) 2
- c) 3
- d) 4

Ans: A