JEE Main 2022 (June) Chapter-wise Qs Bank

Questions MathonGo

mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

Let
$$A = \{z \in \mathbb{C} : 1 \le |z - (1 + i)| \le 2\}$$
 and Space for your notes:

$$B = \{z \in A : |z - (1 - i)| = 1\} \dots \text{Then, } B : \text{math ongo} \text{ mathongo} \text{ mathongo}$$

Q2 - 24 June - Shift 2 // mathongo /// mathongo /// mathongo /// mathongo

Let
$$S = \{z \in \mathbb{C} : |z-3| \le 1 \text{ and } z(4+3i) + \overline{z}(4-3i) \le 24 \}.$$

If $\alpha + i\beta$ is the point in S which is closest to 4i,

then
$$25(\alpha + \beta)$$
 is equal to .

then
$$25(\alpha + \beta)$$
 is equal to ______ mathongo _____ mathongo _____ mathongo _____ mathongo

Q3 - 25 June - Shift 1

mathongo ///. mathongo ///. mathongo ///. mathongo Let a circle C in complex plane pass tltrough the points $z_1 = 3 + 4i$, $z_2 = 4 + 3i$ and $z_3 = 5i$. If $z(\neq z_1)$ is a point on C such that the line through z and z_1 is perpendicular to the line

through
$$z_2$$
 and z_3 , then $arg(z)$ is equal to :

(A) $tan^{-1}\left(\frac{2}{\sqrt{5}}\right) - \pi$ (B) $tan^{-1}\left(\frac{24}{7}\right) - \pi$ mathongo

(C)
$$\tan^{-1}(3) - \pi$$
 (D) $\tan^{-1}\left(\frac{3}{4}\right) - \pi$

(D)
$$tan^{-1} \left(\frac{3}{4}\right) - \pi$$

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Let z_1 and z_2 be two complex numbers such that $s_2 = s_2 = s_3 = s_4 = s_4 = s_4 = s_4 = s_4 = s_5 = s_4 = s_5 = s_4 = s_5 = s_4 = s_5 =$

 $\frac{2}{\overline{z}_1} = i\overline{z}_2 \text{ and } \arg\left(\frac{z_1}{\overline{z}_2}\right) = \pi. \text{ Then} \text{ mathongo } \text{ m$

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(B) arg $z_2 = -\frac{3\pi}{4}$ mathongo ///

(C) $\arg z_1 = \frac{\pi}{4}$ /// mathogo /// mathogo /// mathogo /// mathogo

Q5 - 26 June - Shift 1 mathongo /// mathongo /// mathongo /// mathongo

Let $A = \left\{ z \in \mathbb{C} : \frac{z+1}{z-1} < 1 \right\}$ mathongo ///. mathongo ///. mathongo ///. mathongo

and $B = \left\{z \in C : arg\left(\frac{z-1}{z+1}\right) = \frac{2\pi}{3}\right\}$ athongo /// mathongo /// mathongo

///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo Then $A \cap B$ is :

///. mathongo ///. mathongo ///. mathongo ///. (A) a portion of a circle centred at 0,-

//. mathongo ///. mathongo ///. mathongo

lies in the second and third quadrants only

mathongo ///. mathongo /// "... mathongo | //... mathongo | //... mathongo (B) a portion of a circle centred at |0,-

lies in the second quadrant only

mathongo ///. mathongo ///. mathongo ///. mathongo (C) an empty set

mathongo /// mathongo /// m2thongo /// mathongo /// mathongo (D) a portion of a circle of radius $\frac{2}{\sqrt{2}}$ that lies in

///. mathongo ///. mathongo ///. mathongo the third quadrant only

Q6 - 26 June - Shift 2 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

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Questions MathonGo

is equal to _____.

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Q7-27 June - Shift 1//. mathongo ///. mathongo ///. mathongo ///. mathongo

The area of the polygon, whose vertices are the non-real roots of the equation $\overline{z} = iz^2$ is:

mathongo /// mathongo

(C) $\frac{3}{2}$ athongo (D) $\frac{3}{4}$ mathongo (D) $\frac{3}{4}$ mathongo (D) mathongo (D)

///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

Q8 - 27 June - Shift 2

The number of points of intersection of Space for your notes:

|z-(4+3i)|=2 and |z|+|z-4|=6, $z \in C$ is: mathongo mathongo mathongo

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Q9 - 28 June - Shift 1

The number of elements in the set mathongo mathongo mathongo Space for your notes:

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/// mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo

Sum of squares of modulus of all the complex numbers z satisfying $\overline{z} = iz^2 + z^2 - z$ is equal to

". mathongo | mathongo

JEE Main 2022 (June) Chapter-wise Qs Bank

Questions MathonGo

011	- 29 June - Shift 1					

Let
$$\alpha$$
 and β be the roots of the equation $x^2 + (2i - Space for your notes:$

1) = 0. Then, the value of
$$|\alpha^8 + \beta^8|$$
 is equal to :

$$(A)$$
 50 thongo $///$ mathogo $///$ mathongo $///$ mathongo $///$ mathongo

012-29 June Shift 1 mathongo ///. mathongo ///. mathongo ///. mathongo

$$|z| < 1, z(1+i) + \overline{z}(1-i)$$

Let
$$S = \{z \in C : |z-2| \le 1, z(1+i) + \overline{z}(1-1)\}$$
 Space for your notes: $|z-4i|$ attains minimum and maximum values, respectively, at $z_1 \in S$ and $z_2 \in S$.

If
$$5(|z_1|^2 + |z_2|^2) = \alpha + \beta\sqrt{5}$$
, where α and β are at β mathongo β mathongo

integers, then the value of
$$\alpha$$
 + β is equal to _____. ___ mathongo _____ mathongo _____ mathongo _____ mathongo _____ mathongo _____ mathongo

Let arg (z) represent the principal argument of the mathons mathons complex number z. The,
$$|z| = 3$$
 and arg $(z - 1)$ —

complex number z. The,
$$|z| = 3$$
 and arg $(z - 1)$ –

$$\arg (z + 1) = \frac{\pi}{4} \text{ intersect:}$$

$$\frac{\text{arg }(z+1) = \frac{\pi}{4} \text{ intersect:}}{\text{mathongo}} \text{ mathongo} \text$$

(C) Nowhere

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Questions MathonGo										
Answer Ke	///. y									
Q1 (D)		Q2 (80)		Q3 (B)		Q4	` ′			
/// mathongo										
Q5 (B) /// mathongo		` '		Q7 (A) mathongo		Q8 mathongo	` ′			
Q9 (40)		Q10 (2)		Q11 (A)			2 (26)			
/// mathongo										
Q13 (C) mathongo										
			/4.	mathongo #MathBoleTo	oh M	mathongo athonGo				

JEE Main 2022 (July) Chapter-wise Qs Bank

Questions MathonGo mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

If
$$\alpha, \beta, \gamma, \delta$$
 are the roots of the equation $space for your notes$:

$$x^4 + x^3 + x^2 + x + 1 = 0$$
, then

$$\alpha^{2021} + \beta^{2021} + \gamma^{2021} + \delta^{2021}$$
 is equal to .

$$\alpha^{2021} + \beta^{2021} + \gamma^{2021} + \delta^{2021}$$
 is equal to . mathongo /// mathongo /// mathongo

$$ho(B)-1$$

For
$$n \in N$$
, let $S_n = \left\{z \in C : |z-3+2i| = \frac{n}{4}\right\}$ and Space for your notes:

$$T_{n} = \left\{ z \in C: |z-2+3i| = \frac{1}{n} \right\}.$$
 mathongo /// mathongo /// mathongo /// mathongo

$$\{n \in N : S_n \cap T_n = \emptyset\} \text{ is } :$$

(B)
$$\frac{7}{2}$$

$$\frac{9}{2}$$
 mathor

JEE Main 2022 (July) Chapter-wise Qs Bank

Questions MathonGo

Let O be the origin and A be the point $z_1 = 1 + 2i$. Space for your notes:

If B is the point z_2 , $Re(z_2) < 0$, such that OAB is a

mathongo ///. mathongo ///. mathongo right angled isosceles triangle with OB as

hypotenuse, then which of the following is NOT at longo /// mathongo /// mathongo

true?

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(A) arg $z_2 = \pi - \tan^{-1} 3$

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mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

 $(C) |z_2| = \sqrt{10}$

/// mathongo /// mathongo /// mathongo /// mathongo

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Q5 - 26 July Shift 2//. mathongo //. mathongo //. mathongo //. mathongo //. mathongo

If z = x + iy satisfies |z| - 2 = 0 and |z-i|-|z+5i|=0,

themathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

Space for your notes:

(A) x + 2y - 4 = 0 mathon (B) $x^2 + y + 4 = 0$ mathon (B) x + y + 4 = 0 mathon (B) x + 2y + 4 = 0 mathon (

(C) x + 2y + 4 = 0 (D) $x^2 - y + 3 = 0$ mathongo /// mathongo /// mathongo /// mathongo /// mathongo

Q6-27 July: Shift 1//. mathongo //. mathongo //. mathongo //. mathongo //. mathongo

Let the minimum value v_0 of $v = |z|^2 + |z-3|^2 + |z-6i|^2$,

 $z \in \mathbb{C}$ is attained at $z = z_0$. Then $\left| 2z_0^2 - \overline{z_0}^3 + 3 \right|^2 + v_0^2$ is mathongo what mathongo we mathongo with mathon with mathon

equal to

(A) 1000 mathongo (B) 1024 mathongo (M) math

(C) 1105 ongo /// matho(D) 1196 mathongo /// mathongo /// mathongo /// mathongo

07 - 27 July - Shift 1 //. mathongo //. mathongo //. mathongo //. mathongo

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Questions MathonGo

Let
$$S = \{z \in \mathbb{C} : z^2 + \overline{z} = 0\}$$
. Then $\sum_{z \in S} (\text{Re}(z) + \text{Im}(z))$ and $\sum_{z \in S} (\text{Re}(z) + \text{$

Q8 - 27 July - Shift 2

Let S be the set of all
$$(\alpha, \beta)$$
, $\pi < \alpha, \beta < 2\pi$, for Space for your notes:

which the complex number
$$\frac{1-i\sin\alpha}{1+2i\sin\alpha}$$
 is purely at least 1 mathongo /// mathongo

imaginary and
$$\frac{1+i\cos\beta}{1-2i\cos\beta}$$
 is "purely real. Let at one "mathongo" mathongo

$$Z_{\alpha\beta} = \sin 2\alpha + i\cos 2\beta, (\alpha, \beta) \in S.$$
 mathongo /// mathongo /// mathongo /// mathongo

Then
$$\sum_{(\alpha,\beta)\in S} \left(i Z_{\alpha\beta} + \frac{1}{i Z_{\alpha\beta}}\right)$$
 is equal to longo /// mathongo /// mathongo

Let
$$S_1 = \left\{ z_1 \in \mathbb{C} : |z_1 - 3| = \frac{1}{2} \right\}$$
 and $S_2 = \left\{ z_1 \in \mathbb{C} : |z_1 - 3| = \frac{1}{2} \right\}$ mathongo

$$S_2 = \{z_2 \in \mathbb{C} : |z_2 - z_2 + 1| = |z_2 + z_2 - 1| \}$$
 no Then, at longo /// mathongo

for
$$z_1 \in S_1$$
 and $z_2 \in S_2$, the least value of $|z_2 - z_1|$ at least value of $|z_2 - z_1|$ mathongo /// mathongo

(A)
$$0$$
 mathons (B) $\frac{1}{2}$ mathons (C) $\frac{3}{2}$ mathons $\frac{5}{2}$ mathons (D) $\frac{5}{2}$ mathons (M) mathons (M) mathons (M) mathons

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Questions MathonGo

Let z = a + ib, $b \neq 0$ be complex numbers at $\frac{1}{2}$ Space for your notes:

satisfying $z^2 = \overline{z} \cdot 2^{1-|z|}$. Then the least value of n_{odd} more mathons with mathons of $z^2 = \overline{z} \cdot 2^{1-|z|}$.

 \in N, such that $z^n = (z+1)^n$, is equal to _____ | ____ mathongo | /// mathon

011 - 29 July 2 Shift 1". mathongo //. mathongo //. mathongo //. mathongo

If z = 2 + 3i, then $z^5 + (\overline{z})^5$ is equal to : Space for your notes:

(A) 244 go /// mathongo /// (B) 224 /// mathongo /// mathongo /// mathongo

(C) 245 mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo

012 - 29 July 2 Shift 2/ mathongo /// mathongo /// mathongo /// mathongo

If $z \neq 0$ be a complex number such that $|z - \frac{1}{z}| = 2$, Space for your notes:

then the maximum value of |z| is: mathongo /// mathongo /// mathongo /// mathongo

(D) $\sqrt{2} + 1$

Q13 - 29 July - Shift 2 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo Let $S = \{z = x + iy : |z - 1 + i| \ge |z|, |z| < 2, |z + i| =$ Space for your notes: |z-1|. Then the set of all values of x, for which

 $w = 2x + iy \in S$ for some $y \in \mathbb{R}$, is (A) $\left(\frac{1}{2\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$ mathogo /// mathogo /// mathogo /// mathogo

 $\begin{array}{c|c} \text{(C)} \left(\begin{matrix} \text{hat}_{P}, \eta_{D} \\ -\sqrt{2}, \begin{matrix} \end{matrix} \end{matrix} \right) & \text{mathongo} \\ \text{(D)} \left(\begin{matrix} \text{///.} & 1 \text{nath}_{P}, \eta_{D} \\ -\sqrt{2}, \begin{matrix} \end{matrix} \end{matrix} \right) & \text{mathongo} \\ \text{//.} & \text{mathongo} \\ \text{mathon$ mathongo ///. mathongo ///. mathongo

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Questions MathonGo									
Answer Key	/// mathongo								
Q1 (B)	- \ /		- \ /		_	(D)			
///. mathongo /									
Q5 (C) ///. mathongo	/// mathongo		mathongo		mathongo	///.			
Q9 (C)	Q10 (6)		Q11 (A)		_	2 (D)			
/// mathongo									
Q13 (B) ///. mathongo									
		14.	mathongo #MathBoleTo	oh M	mothongo athonGo				