JEE MAIN 2025
PAPER DISCUSSION

Attempt : 01
Date : 23rd Jan 2025
Shift : 01

LIVE
STREAMING

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LIVE STREAMING

If for an arithmetic progression, if first term is 3 and sum of first four terms is equal $\frac{1}{5}$ of the sum of next four terms, then the sum of first 20 terms is

(A) 1080

(B) 364

(C) -1080

(D) -364

A die has 2 faces of 1, 2 faces of 3, 1 face of 2, 1 face of 4. Another die having 2 face of 2, 2 face of 1, 1 face of 3, 1 face of 4 are tossed. Find probability of getting sum 4 or 5.

How many words can be formed from the word DAUGHTER such that any vowels are not together

(A) 34000

(B) 35000

(C) 36000

(D) 37000

If a function $f(x) = 5x^3 - 15x - a$ has three distinct and real roots for $a \in (\alpha, \beta)$ then find β-2(α)

If $f(x)$ is continuous at $x = 0$, where

$$f(x) = \begin{cases} \dfrac{2}{x}\left(\sin(k_1+1)x + \sin(k_2+1)x\right) & x < 0 \\ 4 & x = 0 \\ \dfrac{2}{x}\log\left[\dfrac{k_2x+1}{k_1x+1}\right] & x > 0 \end{cases}$$

Then $k_1^2 + k_2^2$ is

Sum of all rational terms of $(1 + (2^{1/3}) + (3^{1/2}))^6$

Find area of larger region: $y = |x - 1|$; $x^2 + y^2 = 25$

LIVE STREAM

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JEE ULTIMATE CRASH COURSE 2025

Value of $\cos^{-1}\left[\frac{12}{13}\cos x + \frac{5}{13}\sin x\right]$ is $\left(x \in \left[\frac{\pi}{2}, \pi\right]\right)$

(A) $x + \tan^{-1}\frac{12}{13}$

(B) $x - \tan^{-1}\frac{12}{13}$

(C) $x - \tan^{-1}\frac{5}{12}$

(D) $x + \tan^{-1}\left(\frac{4}{5}\right)$

If for the system of linear equations having infinite solutions

$(\lambda - 4)x + (\lambda - 2)y + \lambda z = 0$

$2x - 3y + 5z = 0$

$x + 2y + 6z = 0$

then $\lambda^2 + \lambda$ is

Find the value of $\sin 70°(\cot 10° \cot 70° - 1)$

A relation defined on set A = {1, 2, 3, 4}, then how many ordered pairs are added to R = {(1, 2,), (2, 3), (3, 3)} so that it becomes equivalence relation?

(A) 10

(B) 9

(C) 7

(D) 8

$(7 + e^{2x})dy - (1 + 2e^{2x})(y + 3)dx = 0$, $y(0) = 5$, then $y(\ell n2) =$

Vectors with position vector A $2\hat{i} + 3n\hat{j} + 2\hat{k}$ B $2\hat{i} - 2\hat{j} + 4p\hat{k}$, such that they are perpendicular and equidistance from origin. Find $3n + 4p$.

If $\left|\frac{z}{z+i}\right| = 2$ represents a circle with centre P then distance of P from D is (where $D : (1, 5)$)

A $\sqrt{\frac{360}{9}}$

B $\sqrt{\frac{370}{9}}$

C $\frac{\sqrt{370}}{9}$

D $\frac{\sqrt{360}}{9}$

If the equation $a(b-c)x^2 + b(c-a)x + c(a-b) = 0$ has equal roots and if $a + c = 5$ and $b = \frac{16}{5}$, then the value of $a^2 + c^2$ is equal to

Let A and B are non-singular commutative matrices. Then $A[(\text{adj } A^{-1})\ (\text{adj}(B^{-1}))]^{-1} B$ is equal to

(A) $|A|\ |B| I_n$

(B) $\dfrac{I_n}{|A||B|}$

(C) $\dfrac{I_n I_n}{|A||A|}$

(D) $\dfrac{I_n}{|B|}$

Then find domain of fog(x).

$$f(x) = \log_e x$$

$$g(x) = \frac{x^4 - 2x^3 + 3x^2 - 2x + 2}{2x^2 - 2x + 1}$$

If $I(x) = \int \frac{dx}{(x-1)^{\frac{11}{13}}(x+15)^{\frac{15}{13}}}$ and find I.

If the curve satisfying the differential equation $\frac{dy}{dx} = \frac{6 - 2e^{2x}y}{1 + e^{2x}}$ passes through (0, 0) and ($\ln 2$, k), then k is

(A) $\frac{3}{5} ln3$

(B) $\frac{6}{5} ln3$

(C) $\frac{8}{9} ln3$

(D) $\frac{7}{2} ln2$