MATHS

BOOKS - MTG MATHS (BENGALI ENGLISH)

QUESTION PAPER 2019

Multiple Choice Questions

1. Let A and B be two square matrices of order 3 and $AB = O_3$, where O_3 denotes the null matrix of order 3. Then

A. must be $A = O_3, B = O_3$

B. if $A \neq O_3$, must be $B \neq O_3$

C. if $A = O_3$, must be $B \neq O_3$

D. may be $A \neq O_3, B \neq O_3$

Answer:

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2. Let P and T be the subsets of X-Y defined by

$P = \{(x, y) : x > 0, y > 0 \text{ and } x^2 + y^2 = 1\}$

Then $P \cap T$ is

A. the void set Φ

B. P

C. T

D. $P - T^C$

Answer:

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3. Let $f : R \to \mathbb{R}$ be defined by $f(x) = x^2 - \frac{x^2}{1 + x^2}$ for all $x \in \mathbb{R}$. Then

A. f is one-one but not onto mapping

B. f is not onto but not one-one mapping

C. f is both one-one and onto

D. f is neither one-one nor onto

Answer:

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4. Let the relation ρ be defined on R as $a\rho b$ iff $1 + ab > 0$. Then

A. ρ is reflexive only

B. ρ is the reflexive relation

C. ρ is reflexive and transitive but not symmetric

D. ρ is reflexive and symmetric but not transitive

Answer:

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5. A problem in mathematics is given to 4 students whose chances of solving individually are $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ and $\frac{1}{5}$. The probability that the problem will be solved at least be one student is

A. $\frac{2}{3}$

B. $\frac{3}{5}$

C. $\frac{4}{5}$

D. $\frac{3}{4}$

Answer:

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6. If X is a random variable such that $\sigma(X) = 2.6$, then $\sigma(1 - 4X)$ is equal to,

A. 7.8

B. -10.4

C. 13

D. 10.4

Answer:

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7. If $e^{\sin x} - e^{-\sin x} - 4 = 0$, then the number of real values of x is

A. 0

B. 1

C. 2

D. 3

Answer:

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8. The angles of a triangles are in the ratio $2:3:7$ and the radius of the circumscribed circle is 10 cm. The length of the smallest side is

A. 2 cm

B. 5 cm

C. 7 cm

D. 10 cm

Answer:

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9. A variable line passes through a fixed point (x_1, v_1) & meets the axes at A and B. If the rectangle OAPB be completed, the locus of P is, (O being the origin of the system of axes)

A. $(y - y_1)^2 = 4(x - x_1)$

B. $\frac{x_1}{x} + \frac{y_1}{y} = 1$

C. $x^2 + y^2 = x_1^2 + y_1^2$

D. $\frac{x^2}{2x_1^2} + \frac{y^2}{y_1^2} = 1$

Answer:

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10. A straight line through the point (3, -2) is inclined at an angle 60° to the line $\sqrt{3}x + y = 1$. If it intersects the X-axis, then its equation will be

A. $y + x\sqrt{3} + 2 + 3\sqrt{3} = 0$

B. $y - x\sqrt{3} + 2 + 3\sqrt{3} = 0$

C. $y - x\sqrt{3} - 2 - 2\sqrt{3} = 0$

D. $x - x\sqrt{3} + 2 - 3\sqrt{3} = 0$

Answer:

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11. A variable line passes through the fixed point (α, β). The locus of the foot of the perpendicular from the origin on the line is,

A. $x^2 + y^2 - \alpha x - \beta y = 0$

B. $x^2 - y^2 + 2\alpha x + 2\beta y = 0$

C. $\alpha x + \beta y \pm \sqrt{(\alpha^2 + \beta^2)} = 0$

D. $\frac{x^2}{\alpha^2} + \frac{y^2}{\beta^2} = 1$

Answer:

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12. If the point of intersection of the lines $2ax + 4ay + c = 0$ and $7bx + 3by - d = 0$ lies in the 4^{th} quadrant and is equidistant from the two axes, where a, b, c and d are non-zero numbers, then ad : be equals to

A. $2:3$

B. $2:1$

C. $1:1$

D. $3:2$

Answer:

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13. A variable circle passes through the fixed point A(p, q) and touches x-axis. The locus the other end of the diameter through A is

A. $(x-p)^2 = 4gy$

B. $(x-q)^2 = 4py$

C. $(y-p)^2 = 4qx$

D. $(y-q)^2 = 4px$

Answer:

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14. If P(0, 0), Q(1, 0) and $R\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ are three given points, then the centre of the circle for which the lines PQ, OR and RP are the tangents is

A. $\left(\frac{1}{2}, \frac{1}{4}\right)$

B. $\left(\frac{1}{2}, \frac{\sqrt{3}}{4}\right)$

C. $\left(\frac{1}{2}, \frac{1}{2\sqrt{3}}\right)$

D. $\left(\frac{1}{2}, \frac{-1}{\sqrt{3}}\right)$

Answer:

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15. For the hyperbola $\frac{x^2}{\cos^2\alpha} - \frac{y^2}{\sin^2\alpha} = 1$, which of the following remains fixed when α varies ?

A. directrix

B. vertices

C. foci

D. eccentricity

Answer:

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16. S and T are the foci of an ellipse and B is the end point of the minor axis. If STB is equilateral triangle, the eccentricity of the ellipse is

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{2}{3}$

Answer:

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17. The equation of the directrices of the hyperbola $3x^2 - 3y^2 - 18x + 12y + 2 = 0$ is

A. $x = 3 \pm \sqrt{\frac{13}{6}}$

B. $x = 3 \pm \sqrt{\frac{6}{13}}$

C. $x = 6 \pm \sqrt{\frac{13}{3}}$

D. $x = 6 \pm \sqrt{\frac{3}{13}}$

Answer:

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18. P is the extremity of the latusrectum of ellipse $3x^2 + 4y^2 = 48$ in the first quadrant. The eccentric angle of P is

A. $\frac{\pi}{8}$

B. $\frac{3\pi}{4}$

C. $\frac{\pi}{3}$

D. $\frac{2\pi}{3}$

Answer:

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19. The direction ratios of the normal to the plane passing through the points (1, 2, -3), (-1, -2, 1) and parallel to $\frac{x-2}{2}=\frac{y+1}{3}=\frac{z}{4}$ is

A. (2, 3, 4)

B. (14, -8, -1)

C. (-2, 0, -3)

D. (1, -2, -3)

Answer:

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20. The equation of the plane, which bisects the line joining the points (1, 2, 3) and (3, 4, 5) at right angles is,

A. $x + y + z = 0$

B. $x + y - z = 0$

C. $x + y + z = 9$

D. $x + y - z + 9 = 0$

Answer:

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21. The limit of the interior angle of a regular polygon of n sides as $n \to \infty$ is

A. π

B. $\frac{\pi}{3}$

C. $\frac{3\pi}{2}$

D. $\frac{2\pi}{3}$

Answer:

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22. Let $f(x) > 0$ for all x and f(x) exists for all x. If f is the inverse function of h and $h'(x) = \frac{1}{1 + \log x}$. Then f'(x) will be

A. $1 + \log(f(x))$

B. $1 + f(x)$

C. $1 - \log(f(x))$

D. $\log f(x)$

Answer:

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23. Consider the function $f(x) = \cos x^2$. Then

A. f is of period 2π

B. f is of period $\sqrt{2\pi}$

C. f is not periodic

D. f is of period π

Answer:

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24. $\lim_{x \to 0} (e^x + x)^{1/x}$

A. Does not exist finitely

B. is 1

C. is e^2

D. is 2

Answer:

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25. Let f(x) be a derivable function , $f'(x) > f(x)$ and f(0) = 0. Then

A. $f(x) > 0$ for all $x > 0$

B. $f(x) < 0$ for all $x > 0$

C. no sign of f(x) can be ascertained

D. f(x) is a constant function

Answer:

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26. Let $f : [1, 3] \to \mathbb{R}$ be a continuous function that if differentiable in (1, 3) an $f'(x) = |f(x)|^2 + 4$ for all $x \in (1, 3)$. Then,

A. $f(3) - f(1) = 5$ is ture

B. $f(3) - f(1) = 5$ is false

C. $f(3) - f(1) = 7$ is false

D. $f(3) - f(1) < 0$ only at one point of (1, 3)

Answer:

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27. $\lim_{x \to 0} (x^n \ln x), n > 0$

A. does not exist

B. exists and is zero

C. exists and is 1

D. exists and is e^{-1}

Answer:

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28. If $\int \cos x \log\left(\tan\frac{x}{2}\right)dx = \sin x \log\left(\tan\frac{x}{2}\right) + f(x)$ then f(x) is equal to, (assuming c is a arbitrary real constant)

A. c

B. c-x

C. c+x

D. 2x+c

Answer:

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29. $y = \int \cos\left\{2\tan^{-1}\sqrt{\frac{1-x}{1+x}}\right\}dx$ is an equation of a family of

A. straight lines

B. circles

C. ellipses

D. parabolas

Answer:

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30. The value of the integration $\int_{-\pi/4}^{\pi/4}\left(\lambda|\sin x|+\frac{\mu\sin x}{1+\cos x}+\gamma\right)dx$

A. is independent of λ only

B. is independent of μ only

C. is independent of γ only

D. depends on λ, μ and γ

Answer:

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31. The value of $\lim_{x\to 0}\frac{1}{x}\left[\int_{y}^{a}e^{\sin^2 t}dt-\int_{x+y}^{a}e^{\sin^2 t}dt\right]$ is equal to

A. $e^{\sin^2 y}$

B. $e^{2 \sin y}$

C. $e^{|\sin y|}$

D. $e^{\operatorname{cosec}^2 y}$

Answer:

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32. If $\int 2^{2^x} . 2^x dx = A . 2^{2^x} + c$, then A =

A. $\frac{1}{\log 2}$

B. log 2

C. $(\log 2)^2$

D. $\frac{1}{(\log 2)^2}$

Answer:

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33. The value of the integral $\int_{-1}^{1}\left\{\frac{x^{2015}}{e^{|x|}(x^2+\cos x)}+\frac{1}{e^{|x|}}\right\}$ dx is equal to

A. 0

B. $1-e^{-1}$

C. $2e^{-1}$

D. $2(1-e^{-1})$

Answer:

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34.

$$\lim_{n\to\infty}\frac{3}{n}\left\{1+\sqrt{\frac{n}{n+3}}+\sqrt{\frac{n}{n+6}}+\sqrt{\frac{n}{n+9}}+\ldots+\sqrt{\frac{n}{n+3(n-1)}}\right.$$

A. does not exist

B. is 1

C. is 2

D. is 3

Answer:

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35. The general solution of the differential equation $\left(1+e^{\frac{x}{y}}\right)dx+\left(1-\frac{x}{y}\right)e^{\frac{x}{y}}dy=0$ is (c is an arbitrary constant)

A. $x-ye^{\frac{x}{y}}=c$

B. $y-xe^{\frac{x}{y}}=c$

C. $x+ye^{\frac{x}{y}}=c$

D. $y+xe^{\frac{x}{y}}=c$

Answer:

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36. General solution of $(x+y)^2\frac{dy}{dx}=a^2, a \neq 0$ is (c is an arbitrary constant)

A. $\frac{x}{a}=\tan\frac{y}{a}+c$

B. $\tan xy = c$

C. $\tan(x+y)=c$

D. $\tan\frac{y+c}{a}=\frac{x+y}{a}$

Answer:

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37. Let P (4, 3) be a point on the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$. If the normal at P intersects the X-axis at (16, 0), then the eccentricity of the hyperbola is

A. $\frac{\sqrt{5}}{2}$

B. 2

C. $\sqrt{2}$

D. $\sqrt{3}$

Answer:

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38. If the radius of a spherical balloon increases by 0.1%, then its volume increases approximately by

A. 0.2%

B. 0.3%

C. 0.4%

D. 0.05%

Answer:

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39. The three sides of a right-angled triangle are in G.P (geometric progression). If the two acute angles be α and β, then $\tan\alpha$ and $\tan\beta$ are

A. $\frac{\sqrt{5}+1}{2}$ and $\frac{\sqrt{5}-1}{2}$

B. $\sqrt{\frac{\sqrt{5}+1}{2}}$ and $\sqrt{\frac{\sqrt{5}-1}{2}}$

C. $\sqrt{5}$ and $\frac{1}{\sqrt{5}}$

D. $\frac{\sqrt{5}}{2}$ and $\frac{2}{\sqrt{5}}$

Answer:

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40. If $\log_2 6 + \frac{1}{2x} = \log_2\left(2^{\frac{1}{x}} + 8\right)$, then the values of x are

A. $\frac{1}{4}, \frac{1}{3}$

B. $\frac{1}{4}, \frac{1}{2}$

C. $-\frac{1}{4}, \frac{1}{2}$

D. $\frac{1}{3}, -\frac{1}{2}$

Answer:

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41. Let z be a complex number such that the principal value of argument, arg $z > 0$. Then arg z - arg (-z) is

A. $\frac{\pi}{2}$

B. $\pm\pi$

C. π

D. $-\pi$

Answer:

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42. The general value of the real angle θ, which satisfies the equation, $(\cos\theta + i\sin\theta)(\cos 2\theta + i\sin 2\theta)\ldots.(\cos n\theta + i\sin n\theta) = 1$ is given by, (assuming k is an integer)

A. $\frac{2k\pi}{n+2}$

B. $\frac{4k\pi}{n(n+1)}$

C. $\frac{4k\pi}{n+1}$

D. $\frac{6k\pi}{n(n+1)}$

Answer:

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43. Let a, b, c be real numbers such that $a + b + c < 0$ and the quadratic equation $ax^2 + bx + c = 0$ has imaginary roots. Then

A. $a > 0, c > 0$

B. $a > 0, c < 0$

C. $a < 0, c > 0$

D. $a < 0, c < 0$

Answer:

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44. A candidate is required to answer 6 out of 12 questions which are divided into two parts A and B, each containing 6 questions and he /she is not permitted to attempt more than 4 questions from any part. In how many different ways can he/she make up his/her choice of 6 questions?

A. 850

B. 800

C. 750

D. 700

Answer:

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45. There are 7 greetings cards, each of a different colour and 7 envelopes of same 7 colours as that of the cards. The number of ways in which the cards can be put in envelopes, so that exactly 4 of the cards go into envelops of respective colour is,

A. ${}^7C_3$

B. $2.\ {}^7C_3$

C. $3!^4C_4$

D. $3!^7C_3{}^4C_3$

Answer:

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46. $7^{2n}+16n-1(n \in N)$ is divisible by

A. 65

B. 63

C. 61

D. 64

Answer:

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47. The number of irrational terms in the expansion of $\left(3^{\frac{1}{8}}+5^{\frac{1}{4}}\right)^{84}$ is

A. 73

B. 74

C. 75

D. 76

Answer:

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48. Let A be a square matrix of order 3 whose all entries are 1 and let I_3 be the identity matrix of order 3. Then the matrix $A - 3I_3$ is

A. invertible

B. orthogonal

C. non-invertible

D. real Skew Symmetric matrix

Answer:

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49. If $A = \begin{pmatrix} 5 & 5x & x \\ 0 & x & 5x \\ 0 & 0 & 5 \end{pmatrix}$ and $|A^2| = 25$, then |x| is equal to

A. $\frac{1}{5}$

B. 5

C. 5^2

D. 1

Answer:

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50. The system of equations

$\lambda x + y + 3z = 0$

$3x + \mu y - z = 0$

$5x + 7y + z = 0$

has infinitely many solutions in $\mathbb{R}$. Then,

A. $\lambda = 2, \mu = 3$

B. $\lambda = 1, \mu = 2$

C. $\lambda = 1, \mu = 3$

D. $\lambda = 3, \mu = 1$

Answer:

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51. Let $f: X \to Y$ and A, B are non-void subsets of Y, then (where the symbols have their usual interpretation)

A. $f^{-1}(A) - f^{-1}(B) \supset f^{-1}(A - B)$ but the opposite does not hold.

B. $f^{-1}(A) - f^{-1}(B) \subset f^{-1}(A - B)$ but the opposite does not hold.

C. $f^{-1}(A - B) = f^{-1}(A) - f^{-1}(B)$

D. $f^{-1}(A - B) = f^{-1}(A) \cup f^{-1}(B)$

Answer:

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52. Let S, T, U be three non-void sets and $f: S \to T, g: T \to U$ be so that g o f : $S \to U$ is surjective. Then

A. g and f are both surjective

B. g is surjective, f may not be so

C. f is surjective, g may not be so

D. f and g both may not be surjective

Answer:

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53. The polar coordinate of a point P is $\left(2, \frac{\pi}{4}\right)$. The polar coordinate of the point Q. Which is such that the line joining PQ is bisected perpendicular by the initial line, is

A. $\left(2, \frac{\pi}{4}\right)$

B. $\left(2, \frac{\pi}{6}\right)$

C. $\left(-2, \frac{\pi}{4}\right)$

D. $\left(-2, \frac{\pi}{6}\right)$

Answer:

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54. The length of conjugate axis of a hyperbola is greater than the length of transverse axis. Then the eccentricity e is,

A. $= \sqrt{2}$

B. $> \sqrt{2}$

C. $< \sqrt{2}$

D. $< \frac{1}{\sqrt{2}}$

Answer:

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55. Let $f(x) = x^4 - 4x^3 + 4x^2 + c, c \in R$. Then

A. f(x) has infinitely many zeros in (1, 2) for all c

B. f(x) has exactly one zero in (1, 2) if $1 - \quad < c < 0$

C. f(x) has double zeros in (1, 2) if $-1 < c < 0$

D. whatever be the value of c, f(x) has no zero in (1, 2)

Answer:

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56. The graphs of the polynomial $x^2 - 1$ and cos x intersect

A. at exactly two points

B. at exactly 3 points

C. at least 4 but at finitely many points

D. at infinitely many points

Answer:

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57. A point is in motion along a hyperbola $y = \frac{10}{x}$ so that its abscissa x increases uniformly at a rate of 1 unit per second. Then, the rate of change of its ordinate, when the point passes through (5, 2)

A. increases at the rate of $\frac{1}{2}$ unit per second

B. decreases at the rate of $\frac{1}{2}$ unit per second

C. decreases at the rate of $\frac{2}{5}$ unit per second

D. increases at the rate of $\frac{2}{5}$ unit per second

Answer:

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58. Let a = min $\{x^2 + 2x + 3 : x \in R\}$ and $b = \lim_{\theta \to 0} \frac{1 - \cos\theta}{\theta^2}$. Then $\sum_{r=0}^{n} a^r b^{n-r}$ is

A. $\frac{2^{n+1} - 1}{3.2^n}$

B. $\dfrac{2^{n+1}+1}{3.2^n}$

C. $\dfrac{4^{n+1}-1}{3.2^n}$

D. $\dfrac{1}{2}(2^n-1)$

Answer:

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59. Let $a > b > 0$ and $I(n) = a^{1/n} - b^{1/n}, J(n) = (a-b)^{1/n}$ for all $n \geq 2$, Then

A. $I(n) < J(n)$

B. $I(n) > J(n)$

C. $I(n) = J(n)$

D. $I(n) + J(n) = 0$

Answer:

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60. Let $\widehat{\alpha}, \widehat{\beta}, \widehat{\gamma}$ be three unit vectors such that $\widehat{\alpha} \times \left(\widehat{\beta} \times \widehat{\gamma}\right) = \frac{1}{2}\left(\widehat{\beta} + \widehat{\gamma}\right)$ where $\widehat{\alpha} \times \left(\widehat{\beta} \times \widehat{\gamma}\right) = (\widehat{\alpha}.\widehat{\gamma})\widehat{\beta} - \left(\widehat{\alpha}.\widehat{\beta}\right)\widehat{\gamma}$.

If $\widehat{\beta}$ is not parallel to $\widehat{\gamma}$, then the angle between $\widehat{\alpha}$ and $\widehat{\beta}$ is

A. $\frac{5\pi}{6}$

B. $\frac{\pi}{6}$

C. $\frac{\pi}{3}$

D. $\frac{2\pi}{3}$

Answer:

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61. The position vectors of the points A, B, C and D are $3\hat{i} - 2\hat{j} - \hat{k}$, $2\hat{i} - 3\hat{j} + 2\hat{k}$, $5\hat{i} - \hat{j} + 2\hat{k}$ and $4\hat{i} - \hat{j} + \lambda\hat{k}$ respectively. If the points A, B, C and D lie on a plane, the value of λ is

A. 0

B. 1

C. 2

D. -4

Answer:

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62. A particle starts at the origin and moves 1 unit horizontally to the right and reaches P_1, then it moves $\frac{1}{2}$ unit vertically up and reaches P_2, then it moves $\frac{1}{4}$ unit horizontally to right and reaches P_3, then it moves $\frac{1}{8}$ unit vertically down and reaches P_4, then it moves $\frac{1}{16}$ unit horizontally to right and reaches P_5 and so on. Let $P_n = (x_n, y_n)$ and $\lim_{n \to \infty} x_n = \alpha$ and $\lim_{n \to \infty} y_n = \beta$. Then (α, β) is

A. (2, 3)

B. $\left(\frac{4}{3}, \frac{2}{5}\right)$

C. $\left(\frac{2}{5}, 1\right)$

D. $\left(\frac{4}{3}, 3\right)$

Answer:

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63. For any non-zero complex number z, the minimum value of $|z| + |z - 1|$ is

A. 1

B. $\frac{1}{2}$

C. 0

D. $\frac{3}{2}$

Answer:

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64. Let $A = \begin{pmatrix} 3 & 0 & 3 \\ 0 & 3 & 0 \\ 3 & 0 & 3 \end{pmatrix}$. Then the roots of the equation det $(A - \lambda I_3) = 0$ (where I_3 is the identify matrix of order 3) are

A. 3, 0, 3

B. 0, 3, 6

C. 1, 0, -6

D. 3, 3, 6

Answer:

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65. If A and B are (-2, -2) and (2, -4) respectively, find the coordinates of P on AB such that AP $= \frac{3}{7}$ AB.

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66. Equation of a tangent to the hyperbola 5x^(2) - y^(2) = 5` and which passes through an external point (2, 8) is a) 3x-y+2=0 b) 3x+y-14=0 c)23x-3y-22=0 d) 3x-23y+178=0

A. $3x - y + 2 = 0$

B. $3x + y - 14 = 0$

C. $23x - 3y - 22 = 0$

D. $3x - 23y + 178 = 0$

Answer:

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67. Let f and g be differentiable on the interval I and let a, $b \in I, a < b$. Then

A. If f(a) = 0 - f(b), the equation f'(x) + f(x)g'(x) = 0 is solvable in (a, b)

B. If f(a) = 0 = f(b), the equation f'(x) + f(x)g'(x) = 0 may not be solvable in (a, b)

C. If g(a) = 0 = g(b), the equation g'(x) + kg(x) = 0 is solvable in (a, b), $k \in R$

D. If g(a) = 0 = g(b), the equation g'(x) = kg(x) = 0 may not be solvable in (a, b), $k \in R$

Answer:

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68. Consider the function $f(x) = \frac{x^3}{4} - \sin \pi x + 3$

A. f(x) does not attain value of within the interval [-2, 2]

B. f(x) takes on the value $2\frac{1}{3}$ in the interval [-2, 2]

C. f(x) takes on the value $3\frac{1}{4}$ in the interval [-2, 2]

D. f(x) takes no value p, $1 < p < 5$ in the interval [-2, 2]

Answer:

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69. Let $I_n = \int_0^1 x^n \tan^{-1} x dx$. If $a_n I_{n+2} + b_n I_n = c_n$ for all $n \geq 1$, then

A. a_1, a_2, a_3 are in G.P.

B. b_1, b_2, b_3 are in A.P

C. c_1, c_2, c_3 are in H.P

D. a_1, a_2, a_3 are in A.P

Answer:

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70. Two particles A and B move from rest along a straight line with constant accelerations f and h respectively. If A takes m seconds more than B and describes n units more than that of B acquiring the same speed, then

A. $(f+h)m^2 = fhn$

B. $(f-fh)m^2 = fhn$

C. $(h-f)n = \frac{1}{2}fhm^2$

D. $\frac{1}{2}(f+h)n = fhm^2$

Answer:

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71. The area bounded by $y = x + 1$ and y = cos x and the x-axis, is

A. 1 sq. unit

B. $\frac{3}{2}$ sq. unit

C. $\frac{1}{4}$ sq. unit

D. $\frac{1}{8}$ sq. unit

Answer:

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72. Let x_1, x_2 be the roots of $x^2 - 3x + a = 0$ and x_3, x_4 be the roots of $x^2 - 12x + b = 0$. If $x_1 < x_2 < x_3 < x_4$ and x_1, x_2, x_3, x_4 are in G.P then ab equals

A. $\frac{24}{5}$

B. 64

C. 16

D. 8

Answer:

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73. If $\theta \in \mathbb{R}$ and $\frac{1 + i\cos\theta}{1 - 2i\cos\theta}$ is real number, then θ will be (when I : Set of integers)

A. $(2n+1)\frac{\pi}{2}, n \in I$

B. $\frac{3n\pi}{2}, n \in I$

C. $n\pi, n \in I$

D. $2n\pi, n \in I$

Answer:

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