MATHS

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2015

Mathematics

1. An equation of a line whose segment between the coordinates axes is divided by the point $\left(\frac{1}{2}, \frac{1}{3}\right)$ in the ratio $2:3$ is

A. 6x+9y=5

B. 9x+6y=5

C. 4x+9y=5

D. 9x+6y=5

Answer:

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2. Find the value of k if the angle between the straight lines $4x - y + 7 = 0, kx - 5y - 9 - 0$ is 45°

A. $\frac{25}{3}$

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

C. 3

D. 5

Answer:

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3. The combined equation of the straight lines passing through the point (4,3) and each line making intercepts on the coordinate axes whose sum is - 1, is

A. (3x-2y-6) (x-2y+2)=0

B. (3x-2y+6) (x-2y+2)=0

C. (3x-2y-6) (x-2y-2)=0

D. (3x-2y+6) (x-2y-2)=0

Answer: 1

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4. If the coordinates of a pont P are transformed to $(\sqrt{2}, -\sqrt{2})$ when the axes are rotated through an angle 45°, then P

A. $(\sqrt{2}, -2\sqrt{2})$

B. $(0-2-\sqrt{2})$

C. $(0-2\sqrt{2})$

D. $(0, -2-\sqrt{2})$

Answer: B

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5. The locus of the point p which is equidstant from 3x+4y+5=0 and 9x+12y+7=0, is

A. a hyperbola

B. an ellipse

C. a parabola

D. a straight line

Answer: 4

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6. The probability of a coin showing head is p and then 100 such coins are tossed. If the probability of 50 coins showing head is same as the probalility of 51 coins showing head then p equals

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

B. $\frac{49}{100}$

C. $\frac{51}{101}$

D. $\frac{50}{101}$

Answer:

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7. X is a binomial variate with parameters $n=6$ and p. If $4P(X=4)=P(X=2)$, then p is s

A. $1/2$

B. $1/3$

C. $1/4$

D. $1/5$

Answer:

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8. In a certain colleage, 4% of men and 1% of women are taller than 1.8m. Also, 60% of students are women. If a student selected at random is found to be taller than 1.8 m, then the probability that the student being a woman is

A. $3/11$

B. $5/11$

C. $6/11$

D. $8/11$

Answer: 1

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9. If A and B are two events such that $P(A/B) = 0.6P(B/A) = 0.3$ and $P(A) = 0.1 \text{then} P(\overline{A} \cap \overline{B})$ equals

A. 0.88

B. 0.12

C. 0.6

D. 0.4

Answer:

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10. If A and B are events such that $P(A \cup B) = \frac{5}{6}, P(\overline{A}) = \frac{1}{4}$ and $P(B) = \frac{1}{3}, \text{then} A$ and B are

A. mutally exclusive

B. independent events

C. exhaustive events

D. exhaustive and independent events

Answer: 2

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11. Two teams A and B have the same mean and their coefficients of variance are 4, 2 respectively. If σ_A, σ_B are the standard deviations of teams A, B respectively then the relation between item is

A. $\sigma_A = \sigma_B$

B. $\sigma_B = 2\sigma_A$

C. $\sigma_A = 2\sigma_B$

D. $\sigma_B = 4\sigma_A$

Answer:

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12. In a data the number I is repeated I times for i=1, 2, ...,n. Then the mean of the data is

A. $\frac{2n+1}{6}$

B. $\frac{2n+1}{4}$

C. $\frac{2n+1}{3}$

D. $\frac{2n+1}{2}$

Answer:

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13. If

$a = 2\hat{i} - 3\hat{j} + 5\hat{j}, \quad b = 3\hat{i} - 4\hat{j} + 5\hat{k}$ and $c = 5\hat{i} - 3\hat{j} - 2\hat{k}$

, then the volume of the parallelpiped with contermiouns edges a+b, b+c, c+a, is

A. 1

B. 5

C. 8

D. 16

Answer: 4

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14. The shortest distance between the skew - lines

$$\frac{x-3}{-1}=\frac{y-4}{2}=\frac{z+2}{1}, \frac{x-1}{1}=\frac{y+7}{3}=\frac{z+2}{2} \text{ is}$$

A. 6

B. 7

C. $3\sqrt{3}$

D. $\sqrt{35}$

Answer:

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15. If the position vectors of the vertices of ΔABC are $3\hat{i}+4\hat{j}-\hat{k}$, $\hat{i}+3\hat{j}+\hat{k}$ and $5\left(\hat{i}+\hat{j}+\hat{k}\right)$, respectively. Then, the magnitude of the altitude from A onto the side BC is

A. $\frac{4}{3}\sqrt{5}$

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

C. $\frac{7}{3}\sqrt{5}$

D. `(8)/(3)sqrt(5)

Answer:

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16. ABCD is a parallelogram and P is a point on the segment $\overline{AD}$ dividing it internally in the ratio 3:1. The line $\overline{BP}$ meets the diagonal AC in Q. Then AQ: QC=

A. $3:4$

B. $4:3$

C. $3:2$

D. $2:3$

Answer:

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17. If M and N are the mid - points of the sides BC and CD respectively of a parallelogram ABCD, then AM + AN equals

A. $\frac{4}{3}AC$

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

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

D. $\frac{6}{5}AC$

Answer: 3

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18. P is the point of intersection of the diagonals of the parallelogram ABCD, If S is any point in space and SA + SB + SC + SD = λSP, then λ equals

A. A. 2

B. B. 4

C. C. 6

D. D. 8

Answer:

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19. If $\Delta ABC, \quad \text{if} \quad r_1 = 2r_2 = 3r_3 \text{then} b : c$ equals

A. $4 : 3$

B. $5 : 4$

C. $2 : 1$

D. $3 : 2$

Answer:

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20. $\frac{1}{r^2} + \frac{1}{r_1^2} + \frac{1}{r_2^2} + \frac{1}{r_3^2}$ equals

A. $\frac{a^2 + b^2 + c^2}{\Delta}$

B. $\frac{a^2 + b^2 + c^2}{(\Delta)^2}$

C. $\frac{\Delta^2}{a^2+b^2+c^2}$

D. $\frac{\Delta}{a^2+b^2+c^2}$

Answer:

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21. The angle of a triangle ABC are in an arithmetic progression . The larger sides a,b satisfy the relation $\frac{\sqrt{3}}{2} < \frac{b}{a} < 1.$ then the possible values of the smallest side are

A. $\frac{a \pm \sqrt{ab^2 - 3a^2}}{2a}$

B. $\frac{a \pm \sqrt{4b^2 - 3a^2}}{2b}$

C. $\frac{a \pm \sqrt{4b^2 - 3a^2}}{2c}$

D. $\frac{a \pm \sqrt{4b^2 - 3a^2}}{2}$

Answer:

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22. If cosh 2x = 199, then coth x equals

A. $\frac{5}{3\sqrt{11}}$

B. $\frac{5}{6\sqrt{11}}$

C. $\frac{7}{3\sqrt{11}}$

D. $\frac{10}{3\sqrt{11}}$

Answer:

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23. If $\cos\left(\cot^{-1}\left(\frac{1}{2}\right)\right) = \cot\left(\cos^{-1}x\right)$, then a value of x is

A. $\frac{1}{\sqrt{6}}$

B. $\frac{-1}{\sqrt{12}}$

C. $\frac{2}{\sqrt{q}(6)}$

D. $\frac{-2}{\sqrt{6}}$

Answer:

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24. The number of solutions of sec x cos 5x + 1 = 0 in the interval $[0, 2\pi]$ is

A. 5

B. 8

C. 10

D. 12

Answer:

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25. If $\Delta ABC, \quad \text{if} \quad \angle C = \frac{\pi}{3}, \text{then} \frac{3}{a+b+c} - \frac{1}{a+c}$ equals

A. $\frac{1}{a+c}$

B. $\frac{1}{b+c}$

C. $\frac{1}{2a+b}$

D. $\frac{1}{b+2c}$

Answer:

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26. If $A = \sin^2\theta + \cos^4\theta$, then for all values of θ, where

A. [1,2]

B. $\left[\frac{3}{4}, 1\right]$

C. $\left[\frac{1}{2}, \frac{3}{4}\right]$

D. $\left[\frac{3}{4}, \frac{19}{16}\right]$

Answer:

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27. If f(x) is a real function defined on [-1,1], then the function g(x) = f(5x+4) is defined on the interval

A. [-4, 9]

B. [-1, 9]

C. [-2, 9]

D. [-3, 9]

Answer:

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28. If $f : N \rightarrow R$ is defined by f(1) = - 1 and f(n+1) = 3f(n) + 2 for $n \geq 1$, then f is

A. one - one

B. onto

C. a constant function

D. $f(n) > 0f \text{ or } n > 1$

Answer:

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29. The remainder of $n^4 - 2n^3 - n^2 + 2n - 26$ when divided by 24, is

A. 20

B. 21

C. 22

D. 23

Answer:

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30. $A(x)=\begin{vmatrix}1 & 2 & 3\\ x+1 & 2x+1 & 3x+1\\ x^2+1 & 2x^2+1 & 3x^2+1\end{vmatrix}\Rightarrow\int_0^1 A(x)dx=$

A. 0

B. 1

C. 2

D. 4

Answer: D

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31. Let $\begin{vmatrix}x^2+x+1 & x+1 & 2x-3\\ 3x^2-1 & x+2 & x-1\\ x^2+5x+1 & 2x+3 & x+4\end{vmatrix}$

$=ax^4+bx^3+cx^2+dx+e$ be an identity in x.

If a,b,c,d are known, then the value of e is

A. 29

B. 24

C. 16

D. 9

Answer:

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32. The system of equations 4x+y+2z=5, x-5y+3z=10, 9x-3y+7z=20 has

A. no solution

B. unique solution

C. two solution

D. infinite number of solutions

Answer:

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33. If $1, \omega, \omega^2$ are the cube roots of unity and $\alpha = \omega + 2\omega^2 - 3, \text{then} \alpha^3 + 12\alpha^2 + 48\alpha + 3$ equals

A. -63

B. -62

C. -61

D. -60

Answer:

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34. If α, β are the roots of 1 + x + x^(2)= 0, then the value of $\alpha^4 + \beta^4 + \alpha^{-4}\beta^{-4}$ is

A. 0

B. 1

C. -1

D. 2

Answer:

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35. If α, β are the roots of the equation $x^2 - 4x + 8 = 0.$

Them for any $n \in N, \alpha^{2n} + \beta^{2n}$ equals

A. $2^{2n+1} \cos \frac{n\pi}{2}$

B. $2^{3n} \cos \frac{n\pi}{2}$

C. $2^{3n+1} \cos \frac{n\pi}{2}$

D. $2^{3n} \cos \frac{n\pi}{4}$

Answer:

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36. If α, β are non - real cube roots of 2, then $\alpha^6 + \beta^6$ equals

A. 8

B. 4

C. 2

D. 1

Answer:

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37. Let $\alpha \neq \beta$ satisfy $\alpha^2 + 1 = 6\alpha, \beta^2 + 1 = 6\beta$. Then, the quadratic equation whose roots are $\frac{\alpha}{\alpha + 1}, \frac{\beta}{\beta + 1}$ is

A. $8^2 + 8x + 1 = 0$

B. $8x^2 - 8x - 1 = 0$

C. $8x^2 - 8x + 1 = 0$

D. $8x^2 + 8x - 1 = 0$

Answer:

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38. The set of solutions of $|x|^2 - 5|x| + 4 < 0$ is

A. $(-4, -1)$

B. (1,4)

C. $(-4, -1) \cup (1, 4)$

D. (-4,4)

Answer:

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39. Let α, β, γ be the roots of $x^3 + x + 10 = 0$ and $\alpha_1 = \frac{\alpha + \beta}{\gamma^2}, \beta_1 = \frac{\beta + \gamma}{\alpha^2}, \gamma_1 = \frac{\gamma + \alpha}{\beta^2}$. Then, the value of $\left(\alpha_1^3 + \beta_1^3 + \gamma_1^3\right) - \frac{1}{10}\left(\alpha_1^2 + \beta_1^2 + \gamma_1^2\right)$ is

A. $\frac{1}{10}$

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

C. $\frac{3}{10}$

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

Answer:

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40. Suppose $\alpha, \beta. \gamma$ are the root of $x^3 + x^2 + x + 2 = 0$.

Then, the value of

$$\left(\frac{\alpha+\beta-2\gamma}{\gamma}\right)\left(\frac{\beta+\gamma-2\alpha}{\alpha}\right)\left(\frac{\gamma+\alpha-2\beta}{\beta}\right)$$ is

A. $-\frac{47}{2}$

B. $\frac{47}{2}$

C. -47

D. 47

Answer:

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41. $\sum_{r=0}^{10} {}^{40-r}C_5$ is equal to

A. ${}^{41}C_5 - {}^{30}C_5$

B. ${}^{41}C_6 - {}^{30}C_6$

C. ${}^{41}C_5 + {}^{30}C_5$

D. ${}^{41}C_6$

Answer:

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42. IF a polygon has 35 diagonals , then the number of sides of the polygon is

A. 12

B. 9

C. 10

D. 11

Answer:

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43. If $x = 1 + \frac{3}{1!} \times \frac{1}{6} + \frac{3 \times 7}{2!}\left(\frac{1}{6}\right)^2 + \frac{3 \times 7 \times 11}{3!}\left(\frac{1}{6}\right)^3 + \ldots$

"then"x^(4)` equals

A. 81

B. 54

C. 27

D. 8

Answer:

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44. If |x| is so small that x^2 and higher powers of x may be neglected, then an approximately value of $\frac{\left(1+\frac{2}{3}x\right)^{-3}(1-15x)^{-1/5}}{(2-3x)^4}$ is

A. $\frac{1}{8}(1+7x)$

B. $\frac{1}{16}(1-7x)$

C. $1-7x$

D. $\frac{1}{16}(1+7x)$

Answer:

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45. The coefficient of x^n in the expansion of $\frac{1}{x^2-5x+6}$ for $|x|<1$ is

A. $\frac{1}{2^{n-1}} - \frac{1}{3^{n-1}}$

B. $\frac{1}{2^{n+2}} - \frac{1}{3^{n+2}}$

C. $\frac{1}{2^{n+1}} - \frac{1}{3^{n+1}}$

D. $\frac{1}{2^{n}} - \frac{1}{3^{n}}$

Answer:

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46. In a ΔABC, the value of $\angle A$ is obtained from the equation $3\cos A + 2 = 0$. The quandratic equation , whose roots are $\sin A$ and $\tan A$ is

A. $3x^2 + \sqrt{5}x - 5 = 0$

B. $6x^2 + \sqrt{5}x - 5 = 0$

C. $6x^2+\sqrt{5}x-5=0$

D. $6x^2+\sqrt{5}x-5=0$

Answer:

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47. Match the differential equations in List I to their integrating factors in List II.

Differential equation	Integrating factor
(P) $(x^3+1)\frac{dy}{dx}+x^2y=3x^2$	(1) x^3
(Q) $x^2\frac{dy}{dx}+3xy=x^6$	(2) $(x^3+1)^2$
(R) $(x^3+1)^2\frac{dy}{dx}+6x^2(x^3+1)y=x^2$	(3) $(x^2+1)^2$
(S) $(x^2+1)\frac{dy}{dx}+4xy=\ln x$	(4) x^2+1
	(5) $(x^3+1)^{1/3}$
	(6) $(x^3+1)^{1/2}$

A. $\begin{matrix} P & Q & R & S \\ 4 & 1 & 2 & 3 \end{matrix}$

B. $\begin{matrix} P & Q & R & S \\ 5 & 1 & 2 & 3 \end{matrix}$

C. $\begin{matrix} P & Q & R & S \\ 5 & 2 & 3 & 6 \end{matrix}$

D. $\begin{matrix} P & Q & R & S \\ 5 & 1 & 3 & 4 \end{matrix}$

Answer:

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48. The solution of the differential equation $xy' = 2xe^{-y/x} + y$ is

A. $e^{y/x} + \log|Cx| = 0$

B. $e^{-y/x} = x + C$

C. $e^{y/x} = \log|Cx|$

D. $e^{y/x} = 2\log|Cx|$

Answer:

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49. The differential equation of the family of curve $y = ax + \frac{1}{a}$, where $a \neq 0$ is an arbitrary constant, has the degree

A. 4

B. 3

C. 1

D. 2

Answer:

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50. The area of the region bounded by the curves $y = 9x^2$ and $y = 5x^2 + 4$ (in square units) is

A. 64

B. $\frac{64}{3}$

C. $\frac{32}{3}$

D. $\frac{16}{3}$

Answer:

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51. $\int_0^{\pi/2} \frac{16 \sin x . \cos x}{\sin^4 x + \cos^4 x} dx =$

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

B. $\frac{\pi^2}{2}$

C. π^2

D. $2\pi^2$

Answer:

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52. $\int_0^1 \sqrt{\frac{1-x}{1+x}}\,dx$

A. $\frac{\pi}{2} - 1$

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

C. $\pi - 1$

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

Answer:

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53.

$$\int \frac{x+5}{x^2+4x+5}dx = a\log\left(x^2+4x+5\right) + b\tan^{-1}(x+k) + C$$

, then (a,b,k) equals

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

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

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

D. (1,3,2)

Answer:

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54. Evaluate $\int \sqrt{e^x - 4} dx$

A. $\tan^{-1}\left(\frac{\sqrt{e^x - 4}}{2}\right) + \sqrt{e^x - 4} + C$

B. $\sqrt[2]{e^x - 4} - 4\tan^{-1}\left(\frac{\sqrt{e^x - 4}}{2}\right) + C$

C. $\sqrt[2]{e - 4} - \cot^{-1}\left(\frac{\sqrt{e^x - 4}}{2}\right) + C$

D. $\sqrt{e^x - 4} - 4\tan^{-1}\left(\sqrt{e^x - 4}\right) + C$

Answer:

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55. If $\int e^{-x} \tan^{-1}(e^x) dx$

A. $e^x - e^{-x} \tan^{-1}(e^x)$

B. $x^2 + e^{-1} \tan^{-1}(e^x)$

C. $-e^{-x}\tan^{-1}(e^x)$

D. $x-e^{-x}\tan^{-1}(e^x)$

Answer:

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56. If $\int \sqrt{\frac{2+x}{2-x}}dx$ is equal to

A. $2\sin^{-1}\left(\frac{x}{2}\right)+\sqrt{4+x^2}+C$

B. $\cos^{-1}\left(\frac{x}{2}\right)+\sqrt{4+x^2}+C$

C. $\sin^{-1}\left(\frac{x}{2}\right)-\sqrt{4-x^2}+C$

D. $2\sin^{-1}\left(\frac{x}{2}\right)-\sqrt{4-x^2}+C$

Answer:

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57. Two particles P and Q located at the points with coordinates $P(t, t^3 - 16t - 3), Q(t+1, t^3 - 6t - 6)$ are moving in a plane. The minimum distance between them in their motion is

A. 1

B. 5

C. 169

D. 49

Answer:

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58. If $f(x) = \begin{cases} x & o \leq x \leq 1 \\ 2 - x & 1 \leq x \leq 2 \end{cases}$, then Rolle's theorem is not applicable to f(x) because

A. f(x) is not defined everywhere on [0,2]

B. f(x) is not continuous on [0,2]

C. f(x) is not differentiable on (1,2)

D. f(x) is not differentiable on (0,2)

Answer:

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59. An equilateral triangle is of side 10 units. In measuring the side, if an error of 0.05 unit is made. Then, the percentage error in the area of the triangle is

A. 5

B. 4

C. 1

D. 0.5

Answer:

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60. If the line y = - 4x + b is tangent to the curve $y = \frac{1}{x}$, then b equals

A. ± 4

B. ± 2

C. ± 1

D. ± 8

Answer:

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61. If $x^2 + y^2 = t + \frac{2}{t}$ and $x^4 + y^4 = t^2 + \frac{4}{t^2}$, then $x^3 y \frac{dy}{dx} =$

A. -1

B. -2

C. $\frac{y}{x}$

D. xy

Answer:

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62. If $y = \tan^{-1}\left(\frac{3x - x^3}{1 - 3x^2}\right) + \tan^{-1}\left(\frac{4x - 4x^3}{1 - 6x^2 + 4x^4}\right)$

then $\frac{dy}{dx} =$

A. $\frac{2}{1 + x^2}$

B. $\frac{4}{1 + x^2}$

C. $\frac{6}{1 + x^2}$

D. $\frac{7}{1 + x^2}$

Answer:

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63. The value of that should be assigned to f(0) so that the function f(x) $= (x + 1)^{\cot x}$ is continuous at x = 0, is

A. e

B. 1

C. 2

D. e^{-1}

Answer:

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64. $\lim_{x \to 0} \left[\tan\left(x + \frac{\pi}{4}\right)\right]^{1/x}$ is equal to

A. e^2

B. e

C. $e^{3/2}$

D. e^{-1}

Answer:

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65. A plane meets the coordinate axes at P,Q,R respecticely. If the centroid of ΔPQR is $\left(1, \frac{1}{2}, \frac{1}{3}\right)$, then the equation of the plane is

A. 2x+4y+3z=5

B. x+2y+3z=3

C. x+4y+6z=5

D. 2x-2y+6z=3

Answer:

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66. If the extremities of a diagonal of a square are (1,2,3) and (2,-3,5), then its side is of length

A. $\sqrt{6}$

B. 15

C. $\sqrt{15}$

D. 3

Answer:

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67. A (4,3,5), B(0,-2,2) and C(3,2,1) are three points. The coordinates of the point in which the bisector of $\angle ABC$ meets the side $\overline{BC}$ is

A. $\left(\frac{15}{8}, \frac{4}{8}, \frac{11}{8}\right)$

B. $\left(\frac{12}{7}, \frac{2}{7}, \frac{10}{7}\right)$

C. $\left(\frac{9}{5}, \frac{2}{7}, \frac{7}{5}\right)$

D. $\left(\frac{3}{2}, 0, \frac{3}{2}\right)$

Answer:

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68. The product of lenghts of perpendicular from any point on the hyperbola $x^2 - y^2 = 16$ to its asymptotes, is

A. 2

B. 4

C. 8

D. 16

Answer:

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69. The centre of the ellipse $\frac{(x+y-3)^2}{9}+\frac{(x-y+1)^2}{16}=1$ is

A. $(-1, 2)$

B. $(1, -2)$

C. $(-1, -2)$

D. (1,2)

Answer:

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70. For the ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$, a list of lines given in List I are to be matched with their equation given in List II.

Line		Equation
(P) Directrix corresponding to the focus (– 3, 0)	(1)	$y = 4$
(Q) Tangent at the vertex (0, 4)	(2)	$3x = 25$
(R) Latusrectum through (3, 0)	(3)	$x = 3$
	(4)	$y + 4 = 0$
	(5)	$x + 3 = 0$
	(6)	$3x + 25 = 0$

A. $\begin{matrix} P & Q & R \\ 2 & 1 & 5 \end{matrix}$

B. $\begin{matrix} P & Q & R \\ 6 & 1 & 3 \end{matrix}$

C. $\begin{matrix} P & Q & R \\ 2 & 4 & 3 \end{matrix}$

D. $\begin{matrix} P & Q & R \\ 5 & 1 & 6 \end{matrix}$

Answer:

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71. If P is point on the parabola $y^2 = 8x$ and A is the point $(1, 0)$, then the locus of the mid point of the line segment AP is

A. $y^2 = 4\left(x - \frac{1}{2}\right)$

B. $y^2 = 2(2x + 1)$

C. $y^2 = x\frac{1}{2}$

D. $y^2 = 2x + 1$

Answer:

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72. The equation of the parabola with focus (1,-1) and directrix x + y + 3 = 0, is

A. $x^2 + y^2 - 10x - 2y - 2xy - 5 = 0$

B. $x^2 + y^2 + 10x - 2y - 2xy - 5 = 0$

C. $x^2 + y^2 + 10x + 2y - 2xy - 5 = 0$

D. $x^2 + y^2 + 10x + 2y + 2xy - 5 = 0$

Answer:

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73. The equation of the circle passing through (1,2) and the points of intersection of the circles $x^2 + y^2 - 8x - 6y + 21 = 0$ and $x^2 + y^2 - 2x - 15 = 0$ is

A. $x^2 + y^2 + 6x - 2y + 9 = 0$

B. $x^2 + y^2 - 6x - 2y + 9 = 0$

C. $x^2 + y^2 - 6x - 4y + 9 = 0$

D. $x^2 + y^2 - 6x + 4y + 9 = 0$

Answer:

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74. The length of the common chord of the circles $(x-a)^2 + y^2 = r^2$ and $x^2 + (y-b)^2 = r^2$ is

A. $\dfrac{ab}{\sqrt{a^2+b^2}}$

B. $\dfrac{2ab}{\sqrt{a^2+b^2}}$

C. $\dfrac{a+b}{\sqrt{a^2+b^2}}$

D. $\sqrt{a^2 + b^2}$

Answer:

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75. If (4,2) and (k,-3) are conjugate points with respect to $x^2 + y^2 - 5x + 8y + 6 = 0$ them k=

A. $\frac{28}{3}$

B. $-\frac{28}{3}$

C. $\frac{3}{28}1$

D. $-\frac{3}{28}$

Answer:

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76. The area (in sq units) of the triangle formed by the tangent, normal at $(1, \sqrt{3})$ to the circle $x^2 + y^2 = 4$ and the X-axis, is

A. $4\sqrt{3}$

B. $\frac{7}{2}\sqrt{3}$

C. $2\sqrt{3}$

D. $\frac{1}{2}\sqrt{3}$

Answer:

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77. The value of a, such that the power of the point (1, 6) with respect to the circle $x^2 + y^2 + 4x - 6y - a = 0$ is -16 is

A. 7

B. 11

C. 13

D. 21

Answer:

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78. The line x+y=k meets the pair of straight lines $x^2 + y^2 - 2x - 4y + 2 = 0$ in two points A and B. If O is the origin and $\angle AOB = 90^\circ$ then the value of $k > 1$ is

A. 5

B. 4

C. 3

D. 2

Answer:

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79. If two pairs of straight lines with combined equations xy + 4x - 3y - 12 = 0 and xy - 3x + 4y - 12 = 0 form a square. Then, the combined equation of its diagonals is

A. $x^2 - 2xy + y^2 + x - y = 0$

B. $x^2 + 2xy + y^2 + x + y = 0$

C. $x^2 - y^2 + x - y = 0$

D. $x^2 - y^2 + x + y = 0$

Answer:

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