MATHS

BOOKS - VIKRAM PUBLICATION (ANDHRA PUBLICATION)

ANDHRA PRADESH MARCH 2019

Question

1. Find the equation of the circle for which the points (4,2), (1,5) are the end points of a diameter.

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2. Find the value of k if the points (4,2) and (k-3) are conjugate points with respect to the circle $x^2 + y^2 - 5x + 8y + 6 = 0$

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3. Find the equation of the radical axis of the circles $x^2 + y^2 - 4x + 6y - 7 = 0, 4(x^2 + y^2) + 8x + 12y - 9 = 0$

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4. Find the equation of the tangent to the parabola $x^2 - 4x - 8y + 12 = 0$ at $\left(4, \frac{3}{2}\right)$

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5. Find the product of lengths of the perpendiculars from any point on the hyperbola $\frac{x^2}{16} - \frac{y^2}{9} = 1$ to its asymptotes.

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6. Evaluate :

$$\int \frac{e^{\times}(1+x)}{\cos^2(xe^{\times})} dx \quad \text{on} \quad I \subset R / \{x \in R : \cos(xe) = 0\}$$

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7. Evaluate : $\int \frac{dx}{(x+1)(x+2)}$

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8. Evaluate : $\int_0^1 \frac{dx}{\sqrt{3-2x}}$

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9. Evaluate : $\int_0^{\frac{n}{2}} \sin^6 \times \cos^4 x dx.$

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10. Form the differential equation corresponding to $y = cx - 2c^2$, where c is a parameter.

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11. Find the equation of the circle passing through the points of intersection of the circles

$x^2 + y^2 - 8x - 6y - 21 = 0$

$x^2 + y^2 - 2x - 15 = 0$ and $(1, 2)$

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12. Find the equation of the ellipes referred to its major and minor axes as the co-ordinate axes X, Y- respectively with latus rectum of length 4 and distance between foci $4\sqrt{2}$.

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13. Find the equation of the tangents to the hyperbola $x^2 - 4y^2 = 4$ which are

parallel and perpendicular to the line x+2y=0

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14. Find the area of one of the curvilinear triangles bounded by $y = \sin x, y = \cos x$ and X-axis.

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15. Solve : $x(x-1)\frac{dy}{dx} - y = x^3(x-1)^3$

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16. Find the transberes common tangents of the circles $x^2 + y^2 - 4x - 10y + 28 = 0$ and $x^2 + y^2 + 4x - 6y + 40$.

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17. Find the equation of the parabola whose focus is S (3,5) and vertex is A(1,3).

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18. Evaluate : $\int \frac{\cos x + 3\sin x + 7}{\cos x + \sin x + 1} dx.$

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19. Obtain reduction formula for

$I_n = \int \cos ec^n x dx$, n being a positive integer, $n \geq 2$ and deduce the value of $\int \cos ec^5 x dx$.

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20. Evaluate : $\int_0^{\pi/4} \log(1 + \tan x) dx$

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21. Solve $\frac{dy}{dx} = \frac{x^2 + xy}{x^2 + y^2}$

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