



MATHS

BOOKS - OSWAAL PUBLICATION

MATHS (KANNADA ENGLISH)

APPLICATION OF INTEGRALS

Short Answer Type Questions li

1. Find the area of the region bounded by the curve $y = x^2 + 2$, $y = x$, $x = 0$ and $x = 3$.



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2. Find the area between the curves $y = x^2$ and $y = x$.



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3. Find area lying between the curves $y^2 = 4x$ and $y = 2x$ is



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4. Find the area of the circle $x^2 + y^2 = 4$ bounded by the lines $x = 0$ and $x = 2$ which is lying in the first quadrant.



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5. Find the area of the region bounded by the curve $y = x^2$ and the line $y = 2$.



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6. Find the area bounded by the parabola $y^2 = 5x$ and the line $y = x$.



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7. The area in square units of the region bounded by $y^2 = 9x$ and $y = 3x$ is :



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8. Find the area of the region bounded by the curve $y = x^2$ and the line $y = 4$.



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9. The area in square units bounded by the normal at (1,2) to the parabola $y^2 = 4x$, x-axis and the curve is given by :



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10. The area of the region bounded by the parabola $y^2 = x$ and the straight line $2y=x$ is :



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11. Find the area of the region bounded by the parabola $y^2 = 2x$ and the straight line $x - y = 4$.



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1. Find the area of a triangle formed by the points $A(5, 2)$, $B(4, 7)$ and $C(7, -4)$.



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2. Using integration, find the area of region bounded by the triangle whose vertices are $(-1, 0)$, $(1, 3)$ and $(3, 2)$.



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3. Find the area of the circle $4x^2 + 4y^2 = 9$ which is interior to the parabola $x^2 = 4y$.



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4. Find the area of the region bounded by the parabola $x^2 = 4y$ and the line $x = 4y - 2$



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5. Find the area of the region bounded by the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$.



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6. Find the area of the region bounded by the two parabolas $y = x^2$ and $y^2 = x$.



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7. Using integration, find the area of the region enclosed between the two circles $x^2 + y^2 = 4$ and $(x - 2)^2 + y^2 = 4$.



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8. Using integration, find the area of the region common to the circle $x^2 + y^2 = 16$ and the parabola $y^2 = 6x$.



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9. Using integration find the area of the triangular region whose sides have the equations $y = 2x + 1$, $y = 3x + 1$ and $x = 4$.



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10. Find the area of the region bounded by the curve $y = x^2$ and the line $y = 4$.



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11. Using integration, find the area of the region bounded by the curve $y = 1 + |x + 1|$ and lines $x = -3$, $x = 3$, $y = 0$.



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12. Using integration, find the area of the region in the first quadrant enclosed by the x-axis, the line $y = x$ and the circle $x^2 + y^2 = 18$.



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13. Find the area of the smaller region bounded by the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ and the line $\frac{x}{3} + \frac{y}{2} = 1$.



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14. Using Integration, find the area of the region bounded by the curves $y = x^2$ and $y = x$.



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15. Using integration, find the area of the region enclosed by the curves $y^2 = 4x$ and $y = x$.



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16. Find the area of the region bounded by the parabola $y = x^2$ and $y = |x|$.



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17. Find the area of the region

$$\{(x, y) : y^2 \leq 6ax \text{ and } x^2 + y^2 \leq 16a^2\}$$

using method of integration .



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18. Find the area of the region

$$\{(x, y) : y^2 \leq 4x, 4x^2 + 4y^2 \leq 9\}$$



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19. Find the area of the region bounded by the parabola $y^2 = 2x$ and the line $x - y = 4$



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20. The area of the region

$$\{(x, y) : x^2 + y^2 \leq 1 \leq x + y\}, \text{ is}$$



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21. Draw the graph of $y = |x + 1|$ and using

integration find the area below $y = |x + 1|$

above x-axis and between $x = -4$ to $x = 2$.



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22. Find the area of the region in the first quadrant enclosed by $x = a\xi s$, the line $x = \sqrt{3}y$ and the circle $x^2 + y^2 = 4$.



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23. Sketch the graph of $y = |x + 3|$ and evaluate the area under the curve $y = |x + 3|$ above $x = a\xi s$ and between $x = 6 \rightarrow x = 0$.



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24. Find the area of the region

$$\{(x, y) : 0 \leq y \leq x^2, 0 \leq y \leq x + 2, 0 \leq x \leq 3\}$$

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25. Using integration, find the area of the

$$\text{region } \{(x, y) : x^2 + y^2 \leq 16, x^2 \leq 6y\}.$$



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