



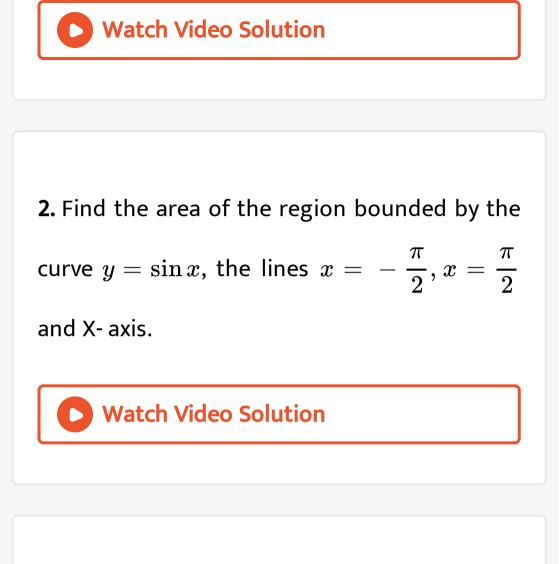
MATHS

BOOKS - NAVBODH MATHS (HINGLISH)

APPLICATIONS OF DEFINITE INTEGRALS (AREA)

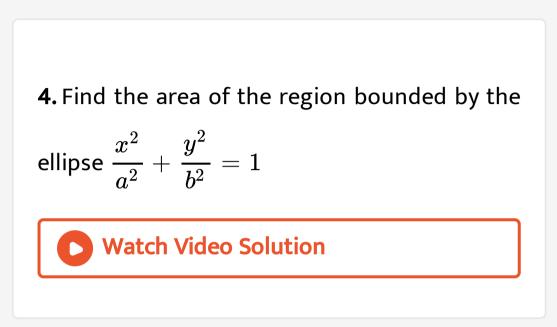
Solved Examples

1. Find the area of the region bounded by parabola $y^2 = 16x$ and the line x = 3.



3. Find the area of the region bounded by the curve $x^2 = 16y$, lines y = 2, y = 6 and Y - axis lying in the first quadrant.





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5. Find the area, lying above the x=axis and included between the circle $x^2 + y^2 = 8x$ and the parabola $y^2 = 4x$.

6. Find the area bounded by the cirxle $x^2+y^2=16$ and the line y=x in the first quadrant .



7. Find the area of the region included between the parabolas

$$y^2=4axandx^2=4ay, wherea>0.$$

8. The area bounded by the curves $y^2 = 4a^2(x-1)$ and lines x = 1 and y = 4a is Watch Video Solution

9. Find the area enclosed between the circle $x^2 + y^2 = 1$ and the line x + y = 1 lying in the first quadrant.

10. The area bounded by the loop of the curve

$$y^2=x^2(1-x)$$
 is

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Examples For Practice 2 Marks

1. Find the area of the region bounde by the curve $y = \sqrt{16 - x^2}$, the X - axis and the lines x = 0, x = 4.

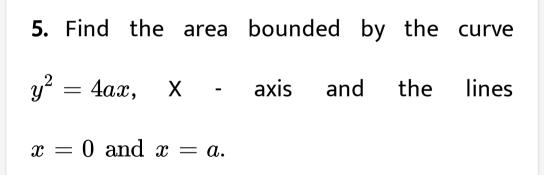
2. Find the area of the region bounded by the parabola $y^2 = 16x$ and the line x = 4.

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3. Find the area of the region bounded by the parabola $y^2 = 4x$, X- axis and the lines x = 1, x = 4.

4. Find the area of the region bounded by the curve $y = \sqrt{6x + 4}$, the X - axis and the lines x = 0, x = 2.

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6. Find the area of the region bounded by the

curve $y = \sin x$ between x = 0 and $x = 2\pi$.

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7. Examples: Find the area bounded by the parabola $y^2 = 4ax$ and its latus rectum.



8. Find the area of the region bounded by the

curve $y = x^2$ and the line y = 4.

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Examples For Practice 3 Or 4 Marks

(1) circle
$$x^2 + y^2 = 25$$
.

(2) ellipse
$$\displaystyle rac{x^2}{1} + \displaystyle rac{y^2}{4} = 1.$$

2. Find the area of the region included between the parabola $y^2=x$ and the line x+y=2 .

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

4. Find the area of the region lying between the parabolas $4y^2 = 9x$ and $3x^2 = 16y$.

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5. Find the area of the loop of the curve $y^2 = x(1-x)^2.$