
1. Find the area bounded by the graphs of $y = -5 \sin(x)$, $y = -\frac{1}{2}x^2 + 5$, $x = 0$, and $x = \pi$.

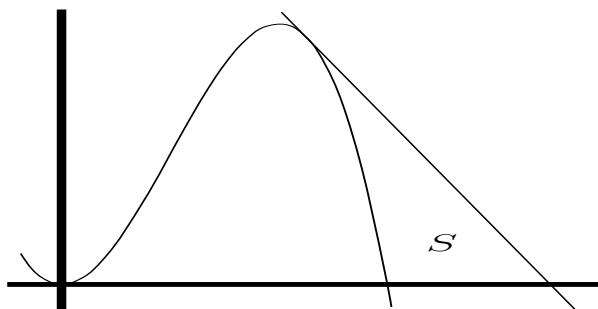
2. Find the area of the bounded region between the curves $y = 4\sqrt{x}$ and $y = (x - 1)^2 - 1$.

3. Find the area of the region bounded by $x = \sin(y)$, $x = 1$, $y = 0$, and $y = \pi$.

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4. Set up an integral that can be used to find the area of region bounded by $x = y^{2/3}$ and $x = y^2$ by integrating with respect to (a) x and (b) y .

5. Set up an integral that can be used to find the area bounded between $x = \sqrt[3]{y}$ and $y = 3x^2 - 2x$.

6. (From the 2003 AP Calculus AB exam) Consider the graph below.



Let f be the function given by $f(x) = 4x^2 - x^3$, and let ℓ be the line $y = 18 - 3x$, where ℓ is tangent to the graph of f in the first quadrant. Let S be the region bounded by the graph of f , the line ℓ , and the x -axis, as shown above.

(a) Find the x -coordinate of the point where ℓ is tangent to the graph of f .

(b) Find the area of S .