

Calculus Quest

Your Name:

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1. Find the average value of the function on the interval $[1,5]$. Then find the value(s) of x that satisfy the conclusion of the Mean Value Theorem for Integrals.

$$y = x^2 - 5x + 4$$

2. Find the **area** of the region bounded by these functions:

$$y = 3 - x, \quad y = \frac{1}{x}$$

3. Find the volume of the solid whose base is the region bounded by these functions...

$$y = 2 + \sqrt{x}, \quad y = 0, \quad x = 0, \quad x = 3$$

...and whose cross-sections perpendicular to the x -axis are squares.

over>>

4. Find the volume of the solid formed by revolving the region bounded by:

$$y = x^3, \quad x = 0, \quad y = 2$$

about the y -axis.



5. Find the volume of the solid formed by revolving the region bounded by:

$$y = \frac{1}{2}x + 2, \quad y = -\frac{1}{4}x^2 + 1, \quad x = -2, \quad x = 3$$

about the line $y = -3$

