

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Find the area of the region under the curve $f(x) = 8 - 4\sqrt[3]{x}$ from $x = 0$ to $x = 8$.

2. Evaluate the definite integral $\int_1^2 \frac{(x+1)^2}{x} dx$

3. Find the average value of the function $f(x) = \frac{1}{x^2}$ on the interval $[1, 4]$.

4. Find the area of the region bounded by the curves $y = 3x^2 - 3$, $y = 2x + 5$, $x = 0$ and $x = 3$.