

YOUR NAME: \_\_\_\_\_

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

1. [5 points] Use the by-parts method to compute the integral  $\int \frac{\ln x}{\sqrt[3]{x}} dx$ .

2. [5 points] Solve the initial value problem  $y' = 3x^2y$ ,  $y(0) = 5$ ,  $y > 0$ .