EXAM 4 - MATH 112

YOUR NAME:＿＿＿＿＿＿＿＿＿＿＿＿

Friday, December 4

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Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!
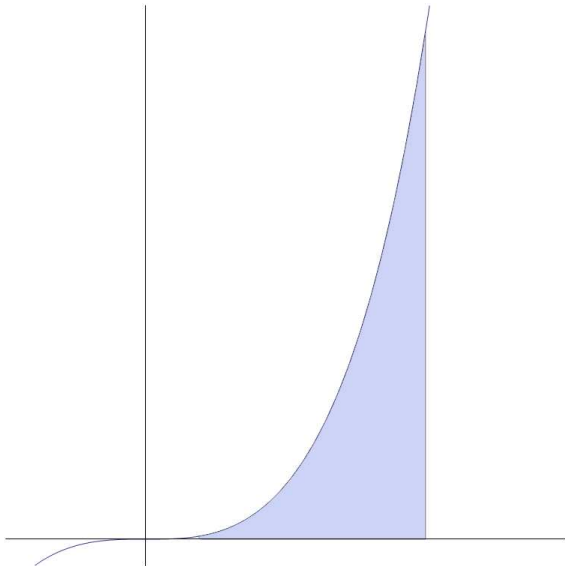
1. Compute the integrals:

   (a) $\displaystyle\int \frac{x^3 + \sqrt[3]{x^2}}{x}dx =$

   (b) $\displaystyle\int \frac{x^2 e^{3x} - 3x}{x^2}dx =$

2. Compute the definite integral $\displaystyle\int_0^1 (6x^2 - 4e^{2x})dx.$

3. Find the area bounded by the parabola $f(x) = -x^2 + 13$ and the straight line $g(x) = 2x + 5$.

4. Find the area under the curve $f(x) = x^3 \sqrt[4]{x^4 + 16}$ between $x = 0$ and $x = 2$.

5. Find the average value of the function $f(x) = xe^{(-1/5)x}$ between $x = 0$ and $x = 5$.