

YOUR NAME: _____

George Voutsadakis

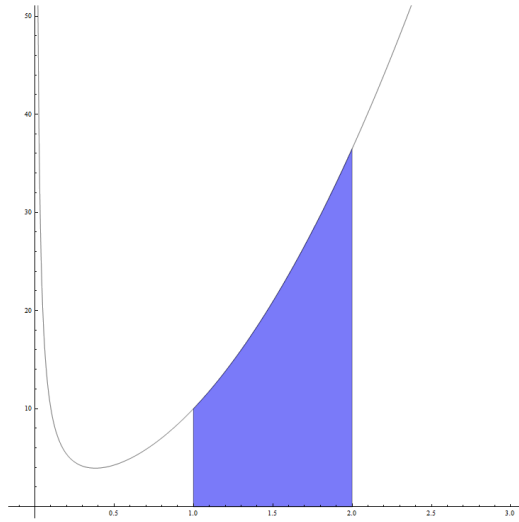
Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Compute the integral

$$\int \frac{4x^4 - 7x + 13}{x} dx =$$

2. A culture of bacteria is growing at the rate of $20e^{0.8t}$ cells per day where t is the number of days since the culture was started. If the culture began with 50 cells, find a formula for the total number of cells in the culture after t days.

3. Compute the area of the region under the graph of $f(x) = 9x^2 + x^{-1}$ over the interval $[1, 2]$.



4. Find the average value of the function $f(x) = 5e^{x/2}$ on $[0, 2]$.