1. **(5 points)** Find the maximum and minimum values of $f(x) = x^3 - 3x + 2$ on the interval $[0, 2]$.

2. **(7 points)** We wish to enclose a rectangular garden with picket fences along the two sides, chainlink in the back, and no fence in the front. Chainlink fence costs \$3 per foot; picket fencing costs \$1. We have \$60 to spend on fencing material. What is the area of the largest garden we can enclose?

3. **(4 points)** Evaluate the expression $27^{-1/2} \cdot 27^{1/6}$ to get a rational answer.

4. **(4 points)** Evaluate the expression $2\log_3 6 - \log_3 4 + \log_3 3$, giving your result as an integer.

5. **(2 point bonus)** Show (on the back of this sheet) that, if you have a predetermined surface area and height for a closed rectangular box, the volume is maximized by choosing the length and width of the box to be equal.