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. Consider the continuous function $f(x) = x^3(4 - x)$ on the closed interval $[-1, 4]$. Find its absolute maximum and its absolute minimum on $[-1, 4]$.

2. Gigi's® truck rental calculates that the price function is $p(x) = 240 - 3x$, where p is the price in dollars at which exactly x trucks will be rented (per day). How many trucks should the company rent and at which price in order to maximize revenue?