Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Find the absolute maximum and absolute minimum values of  $f(x) = x^3 + 3x^2 - 24x$  on the interval [5, 4].

2. Find the absolute maximum and absolute minimum values of  $g(x) = \frac{\ln x}{x}$  on the interval [0, 2].