Given the function \( f(x) = x - \ln(x) - 0.1x^2 \) on the interval \([0,5]\), use calculus to:

1. [5 pts] Find all critical points.
   
   **Solution:** The critical points are given by
   
   \[
   f'(x) = 1 - \frac{1}{x} - 0.2x = \frac{x - 1 - 0.2x^2}{x} = 0
   \]

   We solve \(-0.2x^2 + x - 1 = 0\) using the quadratic formula:
   
   \[
   x = \frac{-1 \pm \sqrt{1 - 4(-0.2)(-1)}}{2(-0.2)} = \frac{-1 \pm \sqrt{2}}{-0.4} = 1.381966011, 3.61893989
   \]

2. [5 pts] Find the location and values of the relative maximum and relative minimum, if they exist.
   
   **Solution:**
The values $f(1.381966011) = 0.8674758744$, $f(3.618933989) = 1.023086213$ and $f(5) = 0.890562088$. Therefore the point $x = 1.381966011$ is a relative minimum. The point $x = 3.618933989$ is a relative maximum.

3. [5 pts] Find the location and values of the absolute maximum and absolute minimum, if they exist.

**Solution:** The absolute maximum of $f(x)$ occurs at $x = 0$ where $f \to +\infty$. The absolute minimum is the same as the relative minimum, and occurs at $x = 1.381966011$