1. (5 points) Find vertex, axis of symmetry, y-intercept, x-intercepts, and intervals when function is increasing or decreasing: \( y = x^2 - 2x - 3 \). Also, determine if vertex is a maximum or minimum.

2. (5 points) Solve the following inequality and state the solution in interval notation: \( w^2 - 4w \geq 12 \).
3. (5 points) Determine whether $x = 4$ is a zero of the polynomial. If it is, factor the polynomial completely: $x^3 + 4x^2 - 17x - 60$.

4. (5 points) Use rational root theorem and state all possible rational solutions to the following equations. Use this information to find a root, then use either long or synthetic division to find all real and imaginary zeros: $h(x) = x^3 - x^2 - 7x + 15$.

Extra Credit: Name an oil company.