Problem 1. Plot the following graphs. Provide the following information: domain and range, critical points, inflection points, intervals of increasing and decreasing, intervals where concave up or down, asymptotes, x and y intercepts, relative extrema.

1. $q(x) = 2x^3 - 15x^2 + 36x - 20$
2. $f(x) = \frac{1}{2}x - \sqrt{x}$
3. $f(x) = \frac{1}{x^2 - 2}$
4. $f(x) = \frac{x^2 + 4}{x^2 - 4}$
5. $f(x) = \frac{9x}{(3x + 1)^2}$
6. $f(x) = x^3 - 3x + 3$
7. $g(x) = x - 3x^{1/3}$
8. $h(x) = \frac{x + 1}{x^3 - 2x}$