2. [13 points] A function $g(x)$ and its derivative are given by

$$g(x) = \frac{x^3 + 34x^2 + 732x + 5400}{(x+30)^4} \quad \text{and} \quad g'(x) = \frac{-(x-6)^2(x-10)}{(x+30)^5}.$$

a. [8 points] Find all critical points of $g(x)$ and all values of x at which $g(x)$ has a local extremum. Use calculus to find and justify your answers, and be sure to show enough evidence to demonstrate that you have found all local extrema.

(For each answer blank below, write NONE in the answer blank if appropriate.)

Answer: critical point(s) at $x =$ _____

Answer: local min(s) at $x =$ _____

Answer: local max(es) at $x =$ _____

b. [5 points] Find the values of x that minimize and maximize $g(x)$ on the interval $[0, \infty)$. Use calculus to find your answers, and be sure to show enough evidence that the points you find are indeed global extrema.

(For each answer blank below, write NONE in the answer blank if appropriate.)

Answer: global min(s) at $x =$ _____

Answer: global max(es) at $x =$ _____