9. [10 points] After a long, cold winter, a ship's captain sails across Lake Michigan to Chicago. Upon arrival, the captain hosts a party on board to celebrate the arrival of spring. The party begins at exactly 6 pm and ends at exactly midnight. Let \( N(t) \) be the noise level, in decibels, of the ship captain’s party \( t \) hours after it begins. During the party, a formula for \( N(t) \) is given by
\[
N(t) = 0.5t^4 - 4t^3 + 7t^2 + 60.
\]

a. [8 points] Find the exact values of \( t \) that minimize and maximize \( N(t) \) on the interval \([0, 6]\). Use calculus to find your answers, and be sure to show enough evidence that the points you find are indeed global extrema.

Answer:
Global min(s) at exactly \( t = \) ________________

Answer:
Global max(es) at exactly \( t = \) ________________

b. [2 points] How loud does the captain’s party get? Remember to include units.

Answer: ________________