The derivative at a point, Part 2

The half-life of Iodine-123, used in medical radiation treatments, is about 13.2 hours. Approximate the instantaneous rate at which the Iodine-123 is decaying 3 hours after a dose of 8.4 μg is administered accurate to within 0.0001 μg/hr.

Express your answer and full justifications, using diagrams of the situation, tables of values, graphs, equations, and descriptions of the relevant quantities and changes in quantities.