10. [8 points]

According to US Census Data, the population of the city of Detroit has been declining since 1950. Suppose that $P = f(t)$ is the population of the city of Detroit (in millions of people) t years after 1950. The table below gives some values of $P = f(t)$.

t	0	10	20	30	40	50
P	1.8496	1.6701	1.5115	1.2033	1.0280	0.9513

a. [4 points]

Use the table to estimate the derivative of $f^{-1}(P)$ at $P = 1.61$. Be sure to include units with your answer.

b. [4 points]

Suppose Detroit's population decays exponentially starting in 1990. In what year will Detroit have a population of 650,000 people?