

7. (11 points) Suppose $P = m(t)$ is the population of Mexico in millions, where t is the number of years since 1980. Explain the meaning of the statements below. You should only use terms and phrases understandable to someone who has never taken calculus. (Assume that the population function is invertible.)

(a) (3 pts.) $\left. \frac{dP}{dt} \right|_{t=0} > 0$

- In 1980, Mexico's population was increasing.

(b) (4 pts.) $m^{-1}(97.5) = 18$

- In 1998 (18 years after 1980) Mexico's population was 97.5 million people.

(c) (4 pts.) $(m^{-1})'(97.5) = 0.46$

- When 97.5 million people lived in Mexico, it took about half a year for the population to increase by another million people.