

**Quiz 11**  
November 20, 2002

Name \_\_\_\_\_

1. The population of Mexico between 1921 and 1990 can be modeled by

$$P(t) = 12.921e^{0.03t}$$

million people where  $t$  is the number of years since 1921.

- (a) How rapidly was the population growing in 1985?

- (b) On the basis of your answer to part *a*, determine by approximately how much the population of Mexico should have increased between 1985 and 1986.

2. The gender ratio for the United States between 1900 and 1990 can be modeled by the equation

$$m(x) = .00006x^3 - 0.00736x^2 + 0.1029x + 104.955$$

males per 100 females.

- (a) Consider this function outside of its modeling context. In that case does it have an absolute maximum or an absolute minimum? If it does find it (them).

- (b) Find when between 1900 and 1990 the gender ratio was the greatest and when it was the least.