

**Math 162****Quiz 9**

Show all work in a neat and organized fashion. Clearly indicate your answers.  
10 points possible.

Use correct units!!

1. (3 pts.) The joint population of the United States and Canada can be modeled as

$$n(x) = 0.0426x^2 + 2.049x + 251.796 \text{ million people}$$

where  $x$  is the number of years since 1980 (based on data from *Statistical Abstract*, 1994).

(a) According to the model, what was the joint population of the United States and Canada in 1992?

(b) How rapidly was the joint population of the United States and Canada changing in 1992?

2. (6 pts.) Find the derivative formula for each function.

(a)  $y = 72.481e^{0.354x}$

(b)  $y = \frac{3}{1 - 8x^2}$

(c)  $y = -\frac{1}{5x^7}$