Name:

You have 25 minutes to do this quiz. You may not use any books or notes while you do the quiz nor discuss the quiz with anyone. You may use a calculator. There is one page to the quiz.

1. Sociologists studying income distribution in the United States over the past two decades have noticed the phenomena that the 'rich get richer'. If we translate this statement into a more detailed statement, it might be expressed by:

The rate of change of a person’s wealth is proportional to how much wealth they have.

Make a mathematical model of this situation. State clearly what all the terms in your expression represent, making clear which terms are constants and which are variables.

2. For the above model, if Mr. Smith’s wealth is $250 million in 1990 and $310 million in 2000, what would this model predict for his wealth in 2010.