QUIZ 1 - MATH 310   Thursday, January 16

YOUR NAME:＿＿＿＿＿＿＿＿＿＿＿＿   George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked.
Each problem is worth around 5 points. It is necessary to show **all** your work. Correct
answers without explanations are worth 0 points. GOOD LUCK!!

1. [6 points] Recall the differential equation

$$m\frac{dv}{dt} = mg - \gamma v.$$

   Assume a free fall of an object is modeled, where $m = 2$ Kg and $\gamma = 4$ Kg/sec. Find the
   velocity function $v(t)$. (You may take $g \approx 10$ m/sec^2.)

2. [6 points] Suppose the population $p(t)$ of a certain species as a function of time t in weeks, increases at a rate proportional to the square root of the current population, with constant of proportionality 4. If the current population is 10,000 individuals, find the population $p(t)$ at time t.