Calculus Question:

An old bus takes off at a light from rest with an acceleration of $a = 2\frac{m}{s^2} - 0.1(t)\frac{m}{s^3}$, where (t) is in seconds. It continues on at a constant speed after it attains its maximum speed.

REALLY, you should do part c) first just qualitatively to see what's going on, but up to you.

a) Find the acceleration, velocity, and displacement after the bus has been accelerating for exactly 10 seconds.
b) What is the bus's maximum speed, and how long does it take to achieve it?
c) Graph the bus's acceleration, velocity, and displacement as a function of time for the first 4 seconds.