Math 225  
Homework Due Wednesday, September 9

The homework due at the beginning of Wednesday’s class is Section 1.2, Problems 24 and 34abcd.

Problem 24 is straightforward.

In Problem 34, start by writing down the mathematical model

\[
\frac{dC}{dt} = (0.1)(200 - C) + (0.1)(400), \quad \text{(DE)}
\]
\[
C(0) = 150. \quad \text{(IC)}
\]

To answer the questions in parts (a), (b), and (c), you need to solve this initial-value problem analytically. Include a plot of the cholesterol function \( C_{abc}(t) \) in (a), (b), and (c) for \( 0 \leq t \leq 50 \). In part (d), you need to modify the above model and then solve the modified IVP. Again, include a plot of the cholesterol function \( C_d(t) \) in (d) for \( 0 \leq t \leq 50 \).

And, of course, please see me if you have questions.