

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

$$\begin{aligned}\frac{dC}{dt} &= (0.1)(200 - C) + (0.1)(400), & (\text{DE}) \\ C(0) &= 150. & (\text{IC})\end{aligned}$$

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.