Math 3550   HOMEWORK #4   Name:

Due 9/22/2025, 9:30 a.m.

Solve the following problems and staple your solutions to this cover sheet. (Computer outputs must be put in the appropriate place in the solution, not attached as an appendix. You may physically cut and paste the output in the problem or allow appropriate space in the printout to add your hand written work.)

1. Sec 11.2, Prob 1.

2. Sec 11.2, Prob 2.

3. Sec 11.2, Prob 5.

4. Sec 11.2, Prob 8 (a, b).

   Hint: Solve the general problem $\frac{dC}{dt} = -k\,e^C$, $C(t_0) = C_0$ and use it to solve the problem for the initial conditions $C(0) = Q$, $C(T) = R_1 + Q$, $C(2T) = R_2 + Q$, etc.

5. Sec 11.2, Prob 8 (c, d).

   Hint: Find R_n by discovering the pattern in R_1, R_2 and R_3.

6. Sec 2.2, Prob 12.

7. Sec 2.2, Prob 13.   See example 1.

8. Sec 2.2, Prob 14.   Discuss your ideas in details.

9. Free points!

10. Free points!