Math 2280 HOMEWORK #12 Name:

Due 11/25/2026, 8:30 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 8.4 #3
2. Sec 8.4 #9
   Hint: $y = \sum_{n=0}^{\infty} a_n (x-1)^n$ and use $x^2 - 2x = (x-1)^2 - 1$.
3. Sec 8.5 #6
4. Sec 8.5 #13
5. Sec 8.5 #16
6. Sec 6.1 #5
   Hint: Write the equation in its standard form; the form used in the theorem.
7. Sec 6.1 #8
   Hint: Functions f_1, f_2 and f_3 are linearly dependent iff $k_1 f_1(x) + k_2 f_2(x) + k_3 f_3(x) = 0$, for all x, with k_1, k_2 and k_3 constants and **not all zero**.
8. Sec 6.1 #15
9. Sec 6.2 #4
   Hint: $r = -1$ is one root of the auxiliary equation.
10. Sec 6.2 #5
    Hint: $r = -1$ is one root of the auxiliary equation.
11. Free points!
12. Free points!