MAT 305 Calculus IV : Review for Midterm 2

Midterm 2 (Wednesday, April 2nd) will contain five problems, which will be taken from the following kinds of problems:

1. **Series Solutions near an Ordinary Point :** Practice problems include Section 5.2: 1-14, 15-18, 23-28 (though you won't need to plot partial sum series in the midterm), Section 5.3: 11-14

2. **Regular Singular Points :** Practice problems include Section 5.4: 1-18, 19-20

3. **Euler Equations :** Practice problems include Section 5.5: 1-12, 13-16 (you won't need to plot solutions in the midterm), 17-21, 22

4. **Series Solutions near Regular Singular Points :** Practice problems include Section 5.6: 1-10, 11-16, Section 5.7: 1-12, 13-17, 18

5. **Bessel's Equation :** Practice problems include Section 5.8: 1-4, 5-6

6. **The Laplace Transform :** Practice problems include Section 6.1: 5-20, Section 6.2: 1-10, 11-23

In addition, you should review **Reduction of Order** (practice problems include Section 3.5: 23-30, 31, 32).