

No problems from this assignment will be collected. These exercises are just for you to look at simple Sturm-Liouville problems. Some solutions will be posted.

Section 17.7: 1 (a), (b), (c), (d), (e), (f); 2

Comments, hints, instructions:

Exercise 17.7.1:

- In (a,b,c) you should recognize by inspection that the problem will lead to one of the series studied in Section 17.4. There is no need to do any more.
- In (d) and (e) you will not be able to find the eigenvalues explicitly; give a graphical interpretation as was done in class or in Figure 3. The two problems are similar but it may be worth your time to look at both, and see why 0 is an eigenvalue in (e) but not in (d).
- Part (f) is again like one of the series from 17.4, but here because the interval is $[-1, 1]$ the form of the solutions will look different. I suggest that you work (f) out from the beginning, showing exactly what the eigenvalues and corresponding eigenfunctions are.

Exercise 17.7.2 is just a quick review; in fact, it is already covered by 17.7.1(a,b,c).