This review sheet is a small list of concepts and problems which might be useful for study. It is not in any sense comprehensive; you will want to consult a combination of notes, recommended texts and homework problems to get a full picture.


2. How (in general) does one compute the coefficients $c_n$ for the orthogonal expansion

$$f(x) = \sum_{n=1}^{\infty} c_n v_n(x)?$$

3. Be able to recognize/create model equations based on conservation laws.

4. What is a conserved or dissipated quantity in a time dependent equation?

5. What is the separation principle?

6. For what problems does one need to find a particular solution? How is this solution used to reduce the problem to a homogeneous one?

Some practice problems from Haberman’s text:

2.4.1 (any), 2.5.1 (any), 2.5.7, 2.6.9, 4.4.1, 5.3.9, 5.5.11, 7.3.1 (any), 7.4.1, 7.7.1, 7.7.3, 7.7.10, 7.8.2 (d), 7.9.1 (b), 7.10.9