Reading Questions for Boyce and DiPrima, Section 3.2

[Submit your responses by 3 am, Wed., Mar. 6, using the webform below.]

What goes on in this chapter is a back-and-forth between results which, in theory, apply to fairly general 2nd order linear problems

\[ y'' + p(t)y' + q(t)y = g(t), \]

(sometimes with ICs, often made homogeneous by taking \( g(t) = 0 \)), and problems that have constant coefficients (ones we may know how to solve).

1. What is meant by the term **fundamental set of solutions**? Identify the fundamental set of solutions in Examples 3, 5 and 6. How do you find such a set of solutions? How do you check whether a set of solutions comprises a fundamental set?

2. Look at the **Existence and Uniqueness Theorem**. Then take a look at the one on p. 220 (Chapter 4). How are these like Theorem 2.4.1 in Section 2.4? How are they different?

3. Identify one item (a concept, a step in an example, a statement, etc.) from this reading assignment you found difficult or confusing.