Exercise 3.1

1. 2\textsuperscript{nd} order, linear, homogeneous, with linear, homogeneous b.c.
2. 2\textsuperscript{nd} order, linear, nonhomogeneous, with linear, homogeneous b.c.
3. 2\textsuperscript{nd} order, linear, nonhomogeneous, with linear, nonhomogeneous b.c.
4. 2\textsuperscript{nd} order, linear, homogeneous, with linear, nonhomogeneous b.c.
5. Nonlinear.
6. 2\textsuperscript{nd} order, linear, homogeneous, with linear, homogeneous b.c.

7. – 8. See the Maple worksheet (3.1.7)