Physics 321: HW 1

Problems 9∗, 11, 12, 14, 15, and 16 in Chapter 1 of Sprott.

Notes:

Problem 9: The "cute" resistor network problems like this (and probs 1.7 and 1.8) are seldom encountered in practical circuits. So mostly we'll skip them. This infinite "ladder" network, however, is one that we'll run into in a very important application near the end of the semester. The useful version of it is called an "R–2R ladder". Note that an infinitely repeated pattern is exactly the same if you remove one segment of the pattern.

∗Please solve the problem for this case, where all the horizontal resistors are R_0 and the vertical ones are $2R_0$. You do not need to solve the original.

Problem 16: The equivalent circuit of a real ammeter is an ideal ammeter (zero resistance) in *series* with an internal resistance.