Homework 6

Chapter 21

Problem 40. A dead battery is charged by connecting it to the live battery of another car with jumper cables (Fig. P21.40). Determine the current in the starter and in the dead battery.

Problem 46. A $C = 10.0\ \mu$F capacitor is charged by a $\epsilon = 10.0$ V battery through a resistance R. The capacitor reaches a potential difference of $V_C(t_f) = 4.00$ V at the instant $t_f = 3.00$ s after the charging begins. Find R.

Problem 55. Four $V = 1.50$ V AA batteries in series are used to power a transistor radio. If the batteries can move a charge of $\Delta Q = 240$ C, how long will they last if the radio has a resistance of $R = 200\Omega$?