

PHYSICS 1020

Homework #7

(Due April 19, 2010)

1. (Giancoli 19-7) A $650\text{-}\Omega$ and a $2200\text{-}\Omega$ resistor are connected in series with a 12-V battery. What is the voltage across the $2200\text{-}\Omega$ resistor?
2. (Giancoli 19-9) Suppose that you have a $680\text{-}\Omega$, a $940\text{-}\Omega$, and a $1.20\text{-k}\Omega$ resistor. What is (a) the maximum, and (b) the minimum resistance you can obtain by combining these?
3. (Giancoli 19-26) For the circuit shown in Fig. 19-46, find the potential difference between points a and b. Each resistor has $R = 75\ \Omega$ and each battery is $1.5\ \text{V}$.
4. (Giancoli 19-35) (a) Six $4.7\text{-}\mu\text{F}$ capacitors are connected in parallel. What is the equivalent capacitance? (b) What is their equivalent capacitance if connected in series?
5. (Giancoli 19-51) The RC circuit of Fig. 19-57 has $R = 6.7\ \text{k}\Omega$ and $C = 3.0\ \mu\text{F}$. The capacitor is at voltage V_0 at $t = 0$, when the switch is closed. How long does it take the capacitor to discharge to 1.0% of its initial voltage?