Chapter 3 Homework

7. R(1) = 3V, 6A R=V/I R=3/6= 500 Ohms
8. ->

a. V = 5V, R = 1.0 Ohms, I = V/R, I = 5/1 = 5A
b. V = 30V, R = 15kOhms, I = V/R, I = 30/15k = 2mA
c. V = 250V, R = 5.6MOhms, I = V/R, I = 250/5.6M = 44.64 micro Amps

30. ->

a. I = 1mA, R = 10 Ohms, V = IR, V = 1mA * 10 = 10V
b. I = 250 microAmps, R = 1.0k Ohms, V = 250 micro * 1.0k = 25mV
c. I = 850 microAmps, R = 10MOhms, V = 850 micro * 10M = 8.5kV

32. ->

a. 3mA, 27kOhm, V = IR, V = 3mA * 27k = 81V
b. 5microAmp, 100MOhm, V = 5micro * 100M = 500V C. 2.5A, 47Ohm, V = IR, V = 2.5 * 47 = 117.5V

37. 120V, 800mA, I = V/R, I = 120/800m = 150 Amps
38.

- 18V, 50mA, R = V/I, 18/50m = 360 Ohms for a.
- 18V, 100mA, R = V/I, 18/100m = 180 Ohms the resistance must be set to.
- The problem with this circuit is there is no proper load to take the amperage with this rheostat, thus creating a short.