## Step 1:

Combine the resistors using the correct formula until you have a simple circuit.

# Equivalent Resistance for a Series Circuit $R_s = R_1 + R_2 + R_3$ Equivalent Resistance for a Parallel Circuit $\frac{1}{R_n} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

#### Step 2:

Solve the simple circuit.

#### Step 3:

Go upward to each complex circuit, one at a time. In each case, follow the rule for separating resistors.

Rule for separating two resistors in series	Rule for separating two resistors in parallel.
Two resistors in series <i>always have the same current</i> .	Two resistors in parallel always have the same voltage (potential difference).

## Step 4:

Solve each more complex circuit as you reach it. Repeat.

# Step 5:

Use the information you have compiled to answer the final question:

Problem 1: Using the table below, find the power dissipated by each individual resistor and the total circuit:

	1			
Original Circuit				
+ 1 Ohms				
Ohms C				
Volts of Sohms				
		1	<u> </u>	
2 Ohms	V			
	V			
	I			
	R			
	P			
Simpler Circuit				
	V			
	т			
	I			
	R			
	P			

# Answer the final question

	Resistor A	Resistor B	Resistor C	Total Circuit
Power (Watts)				

**Problem 2:** Using the table below, find the power dissipated by each individual resistor and the total circuit:

and the total circuit:	
Original Circuit	
+	
40 → A Ohm	
<u> </u>	
<sup>ts</sup> −   c ≥ 9 <sub>1</sub>	
<b>_</b>	
B ≥ 9	
3 Ohms	
	R
	P
Circumber Circumb	
Simpler Circuit	
	V
	I I
	R
	P

**Problem X1:** Using the table below, find the power dissipated by each individual resistor and the total circuit:

and the total circuit:	1			
Original Circuit				
4 Ohms				
A				
<u>+                                   </u>	V			
6 Ohms C C C C C C C C C C C C C C C C C C C	·			
→ → → → → → → → → → → → → → → → → → →	т			
1	I			
	R			
	P			
	1 *			
C'l C' 'I	l	l		
Simpler Circuit				
	V			
	I			
	R			
	IX.			
	P			
	Р			
	Р			
	P			
	Р			
	P			
	Р			
	P			

	Resistor A	Resistor B	Resistor C	Total Circuit
Power (Watts)				

Problem X2:

Using the table below, find the power dissipated by each individual resistor and the total circuit:

Original Circuit			
+			
8 Ohms 8 Ohms A A	V		
3 Ohms	I		
	R		
	P		
Simpler Circuit	V		
Simpler Circuit	V		
Simpler Circuit			
Simpler Circuit	I		
Simpler Circuit	I R		
Simpler Circuit	I R		
Simpler Circuit	I R		

	Resistor A	Resistor B	Resistor C	Total Circuit
Power (Watts)				

One-Step Accordion Problem Template

Une-Step Accordion Problem Templa	ιe			
One-Step Accordion Problem Templa Original Circuit		V		
		I		
		R		
		P		
l C: 1 C: :				
Simpler Circuit		V		
Simpler Circuit		V I		
Simpler Circuit		I		
Simpler Circuit		I R		
Simpler Circuit		I		
Simpler Circuit		I R		
Simpler Circuit		I R		
Simpler Circuit		I R		
Simpler Circuit		I R		

Alternative one-step accordion method	l ter	mplate		
Original Circuit				
		V		
		I		
		R		
		P		
Simpler Circuit				
Simpler Circuit	-	V		
		Ι		
		R		
		P		