Simple Circuit Practice Quiz

Name: Key Hr.____

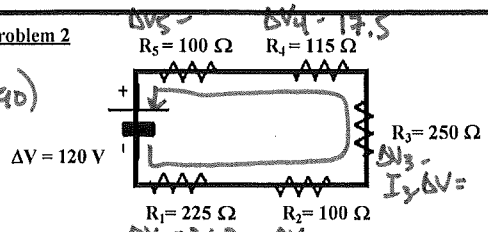
You need to **show your work**.

Problem 1

1a) What are the units of resistance, current and voltage? R= Ω , I = A , ΔV = V

1b) What are the definitions for resistance, current and voltage? R= slows down current I= movement of electrons ΔV= the rate at which energy is drawn from a source of electricity

Problem 2



120 = I(790)
I = .152 A

2) Which direction does the current flow: clockwise or counterclockwise

Which type of circuit is this? Series

What is the total resistance of the circuit? 790 Ω

What is the total current of the circuit? .152 A

What is the voltage drop for R_4? 17.5

Problem 3

$\frac{1}{R_{eq}} = \frac{1}{25} + \frac{1}{125} + \frac{1}{150}$

R1 = 25 Ω R2 = 125 Ω R3 = 150 Ω

ΔV1 = 100 ΔV2 = 100 ΔV3 = 100

I1 = 4 I2 = 0.8 I3 = 0.67

I3 = 0.375

ΔV3 = 75

3) What is the total resistance of the circuit? 18.3 Ω

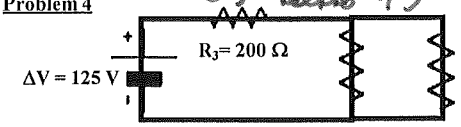
What is the total current of the circuit? 5.47 A

What is the voltage drop for R_3? 100

What is the current through R_1? 4 A

100 = I(18.3)
I = 5.47

Problem 4



R1 = 200 Ω R2 = 400 Ω

ΔV1 = 50 ΔV2 = 50

I1 = .025 I2 = .125

$\frac{1}{200} + \frac{1}{400} = 133.33 + 200 = 333.33$

4) What is the total resistance in the circuit? 333.33

What is the current through R_1 = 0.25

What is the current through R_2 = .125

What is the current through R_3 = 0.375

What is the voltage drop across R_1 = 50

What is the voltage drop across R_2 = 50

What is the voltage drop across R_3 = 75

ΔV = IR

125 = I(333.33)

I = 0.375

$\Delta V_1 + \Delta V_3 = 125$

$\Delta V_1 + 75 = 125$

$\Delta V_1 = 50$