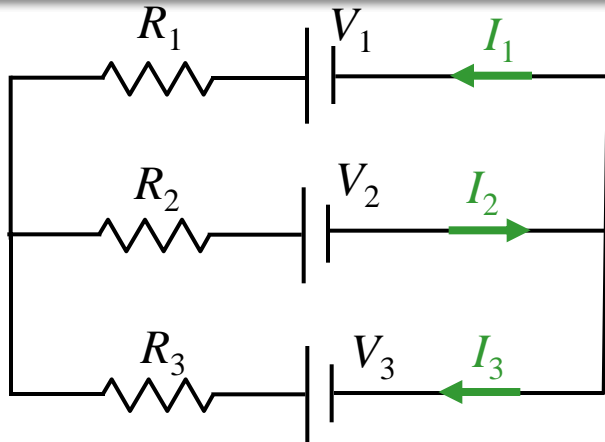


# Calculation



In this circuit, assume  $V_i$  and  $R_i$  are known.

What is  $I_2$  ?

We need 3 equations:  
Which 3 should we use?

1.  $I_2 = I_1 + I_3$
2.  $-V_1 + I_1R_1 - I_3R_3 + V_3 = 0$
3.  $-V_3 + I_3R_3 + I_2R_2 + V_2 = 0$
4.  $-V_2 - I_2R_2 - I_1R_1 + V_1 = 0$

- A) Any 3 will do  
B) 1, 2, and 4  
C) 2, 3, and 4

Why?

- We need 3 INDEPENDENT equations
- Equations 2, 3, and 4 are NOT INDEPENDENT  
Eqn 2 + Eqn 3 = - Eqn 4
- We must choose Equation 1 and any two of the remaining ( 2, 3, and 4)