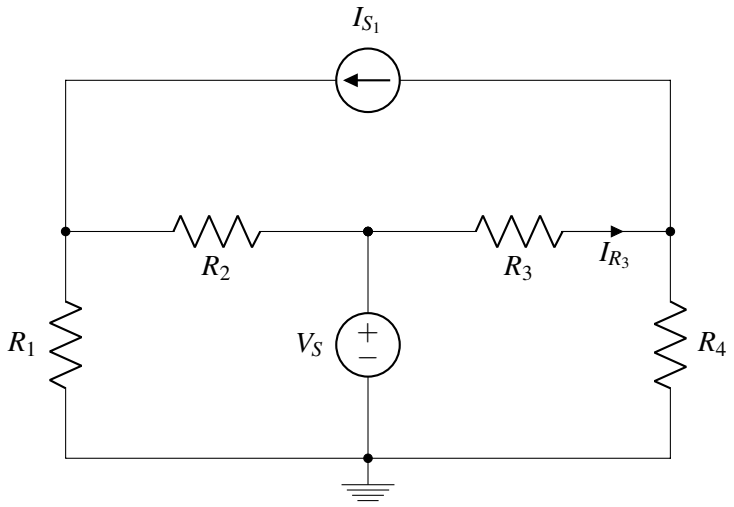
EECS 16A Designing Information Devices and Systems I
Fall 2019 Discussion 7B

Fundamental Power Equation: The power dissipated by a circuit element is equal to $P = IV$, where V is the voltage across its terminals and I the current flowing through it.
Note: If this quantity is negative it means that the element in question is supplying power to the circuit instead of dissipating it.

1. Circuit Analysis

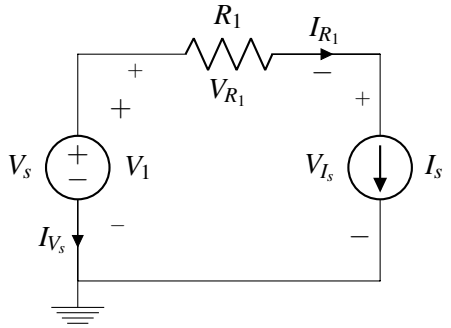
(a) Use nodal analysis to solve for all node voltages.

(b) Find current I_{R_3} flowing through resistor R_3.



2. Passive Sign Convention and Power

Suppose we have the following circuit and label the currents as shown below. Calculate the power dissipated or supplied by every element in the circuit. Let $V_s = 5\,\text{V}, I_s = 0.5\,\text{A}$ and $R_1 = 5\,\Omega$.



3. A simple circuit (aka current divider)

For the following circuit calculate the current I_{R_1}, through resistor R_1 in the direction indicated in the diagram.