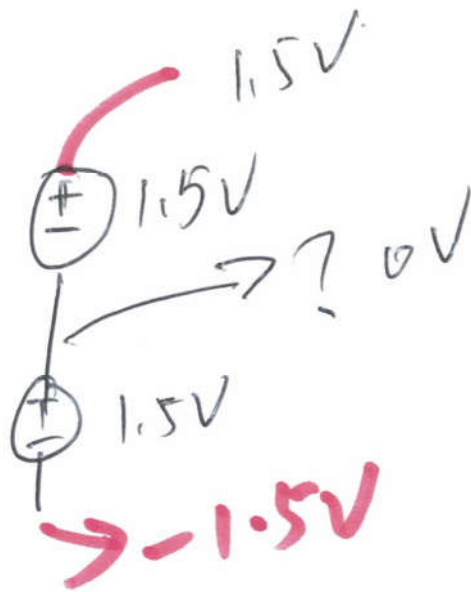
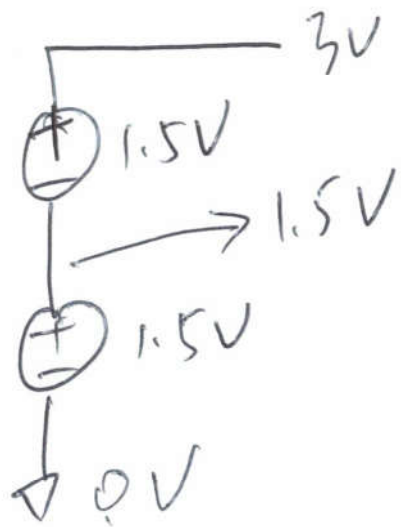
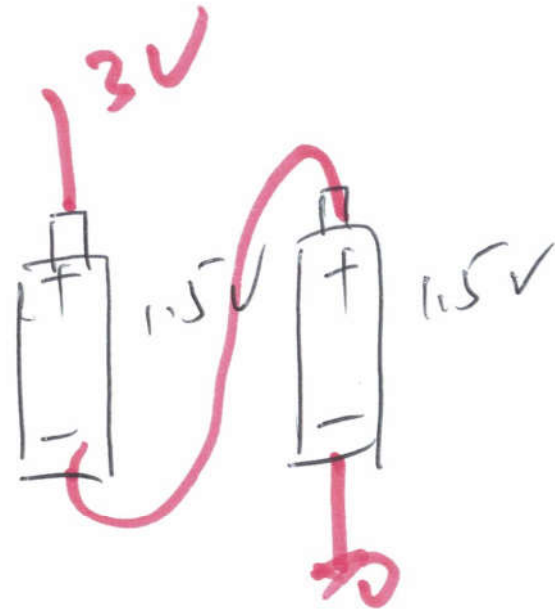
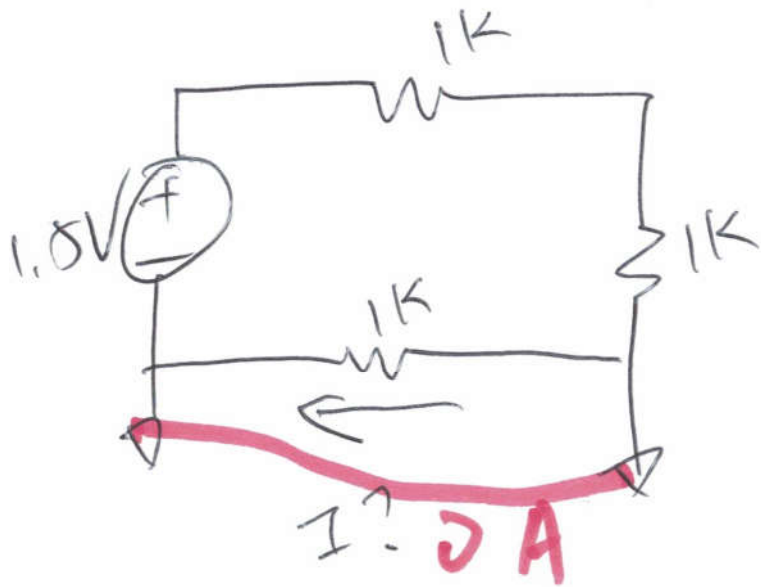
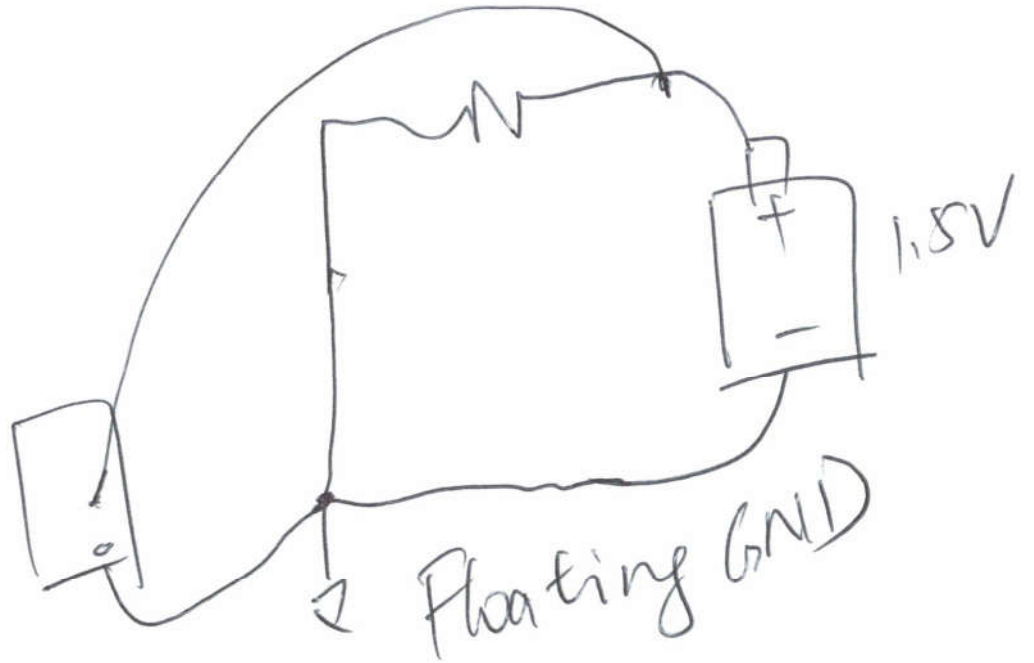


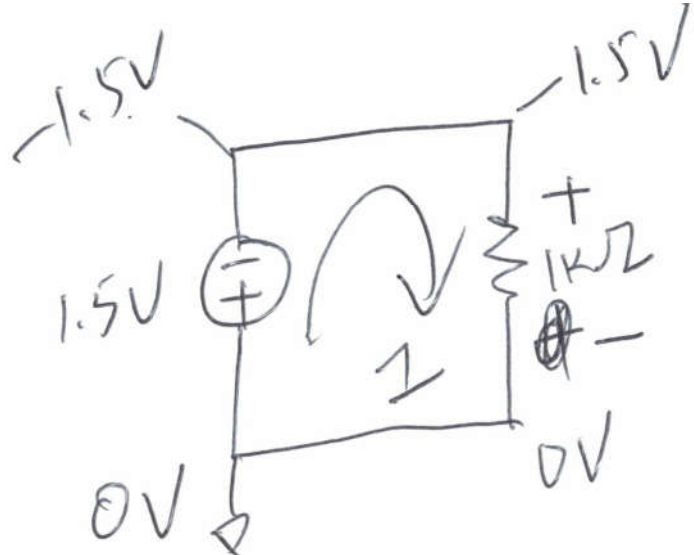
# Lec 2



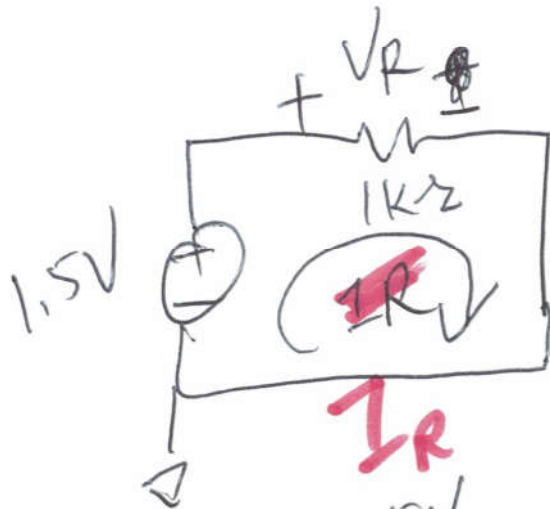


Hot GND Neutral



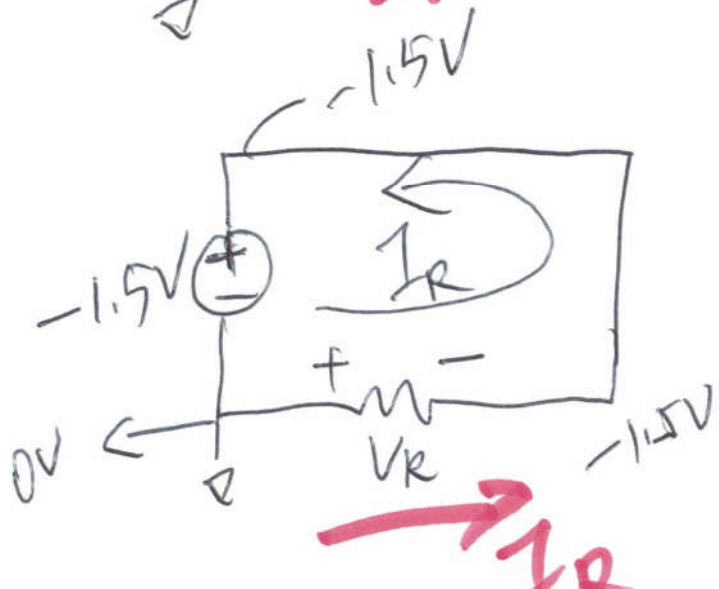


$$I = \frac{-1.5V}{1k\Omega} = -1.5mA$$



$$V_R = 1.5V$$

$$I_R = \frac{V_R}{R} = \frac{1.5V}{1k\Omega} = 1.5mA$$

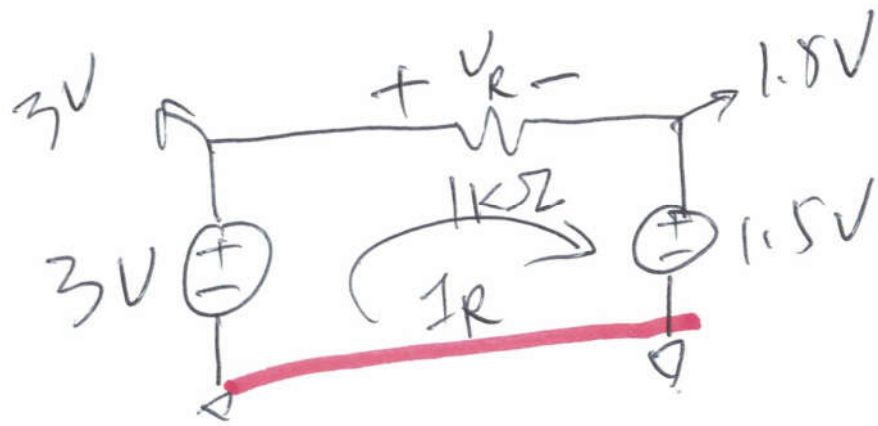


$$V_R = 0V - (-1.5V) = 1.5V$$

$$I_R = \frac{V_R}{R} = \frac{1.5V}{1k\Omega} = 1.5mA$$

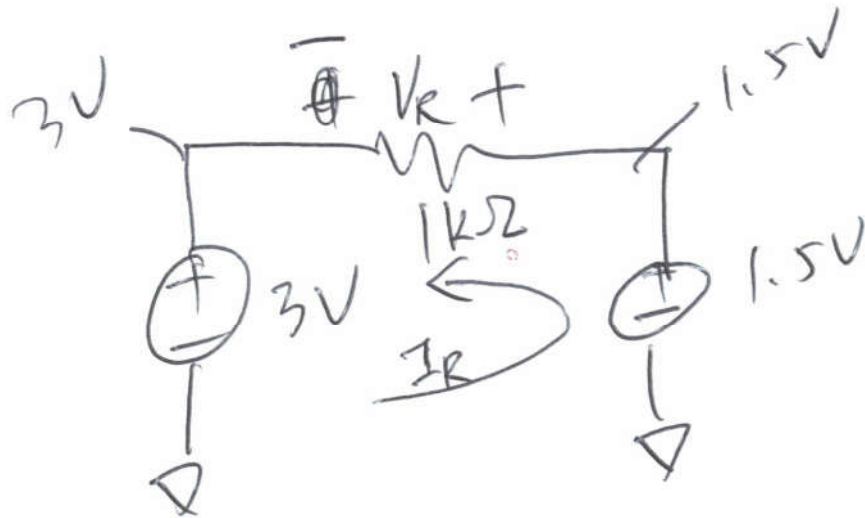
(3)





$$V_R = 3V - 1.5V = 1.5V$$

$$I_R = \frac{V_R}{R} = \frac{1.5V}{1k\Omega} = 1.5mA$$



$$V_R = 1.5V - 3V = -1.5V$$

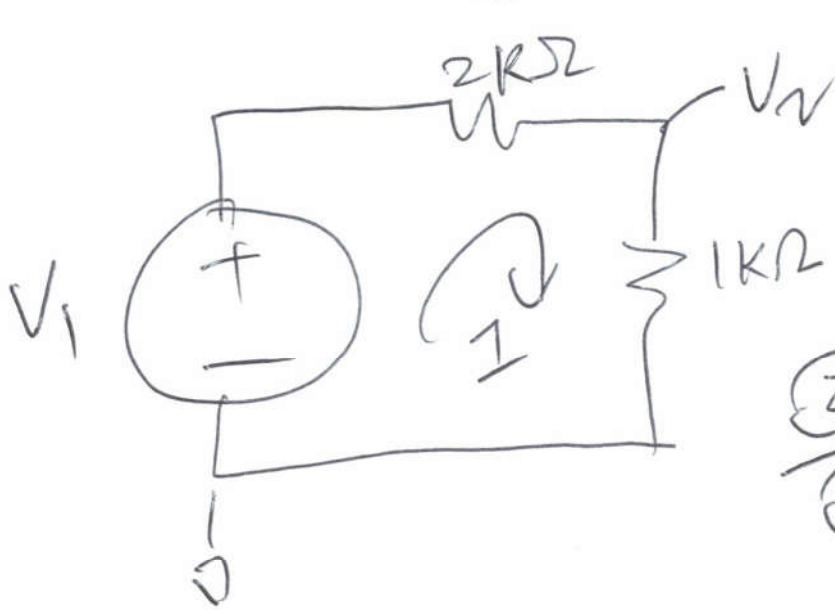
$$I_R = \frac{V_R}{R} = \frac{-1.5V}{1k\Omega} = -1.5mA$$



$$I = \frac{3V}{2k\Omega + 1k\Omega} = 1mA$$

$$V_{out} = 1mA \cdot 1k\Omega = 1V$$

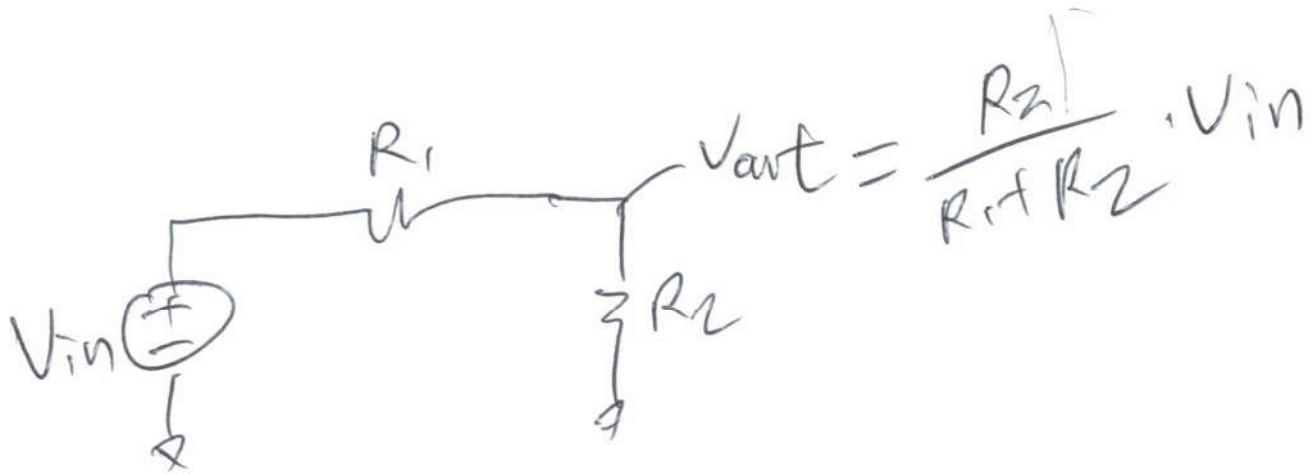
# Voltage divider



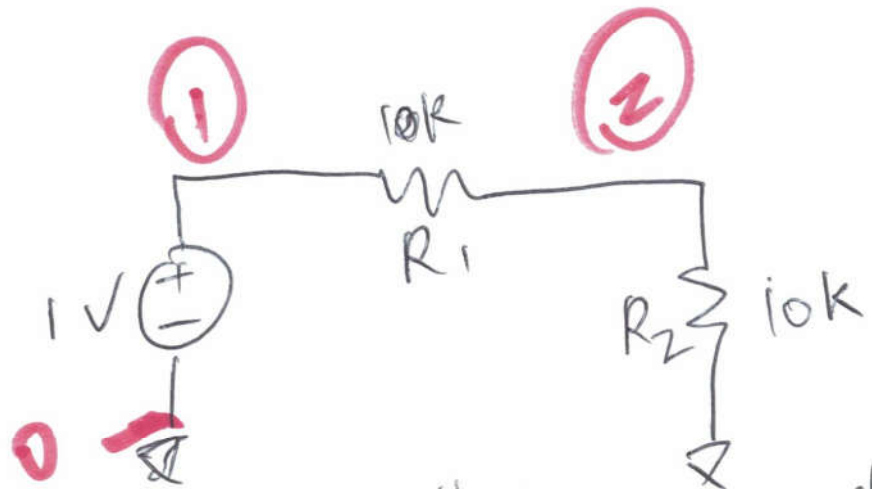
$$V_1 = I \cdot (2k + 1k) \quad (1)$$

$$V_2 = I \cdot 1k \quad (2)$$

$$\frac{(2)}{(1)} = \frac{V_2}{V_1} = \frac{1k}{2k + 1k} = \frac{1}{3}$$



$$V_{out} = \frac{R_2}{R_1 + R_2} \cdot V_{in}$$



voltage nodes  
in the circuit?

