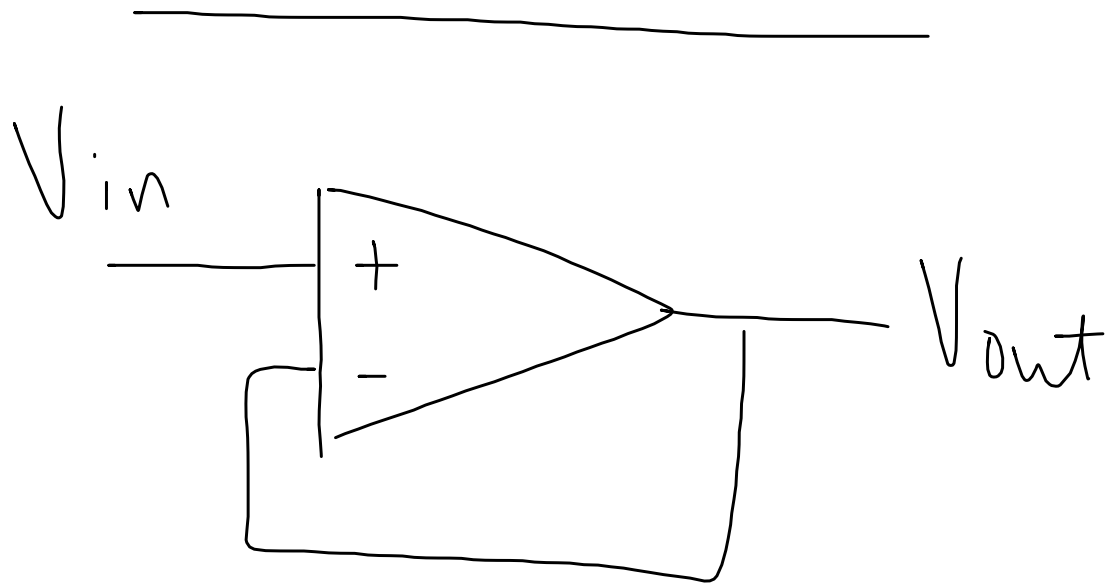


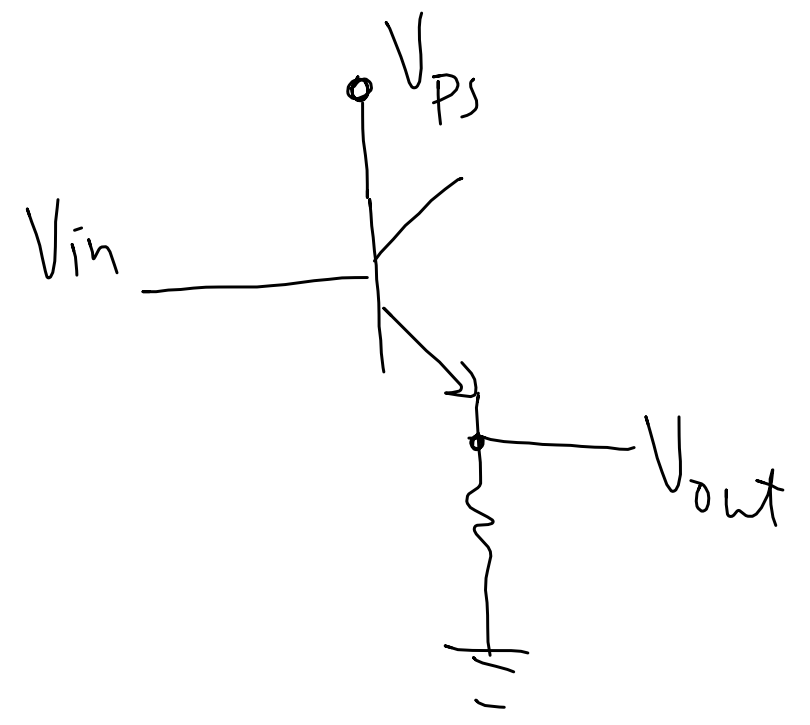
Rule # 1: No current flows into inputs

Rule # 2: Output does whatever it can to make input voltages the same.

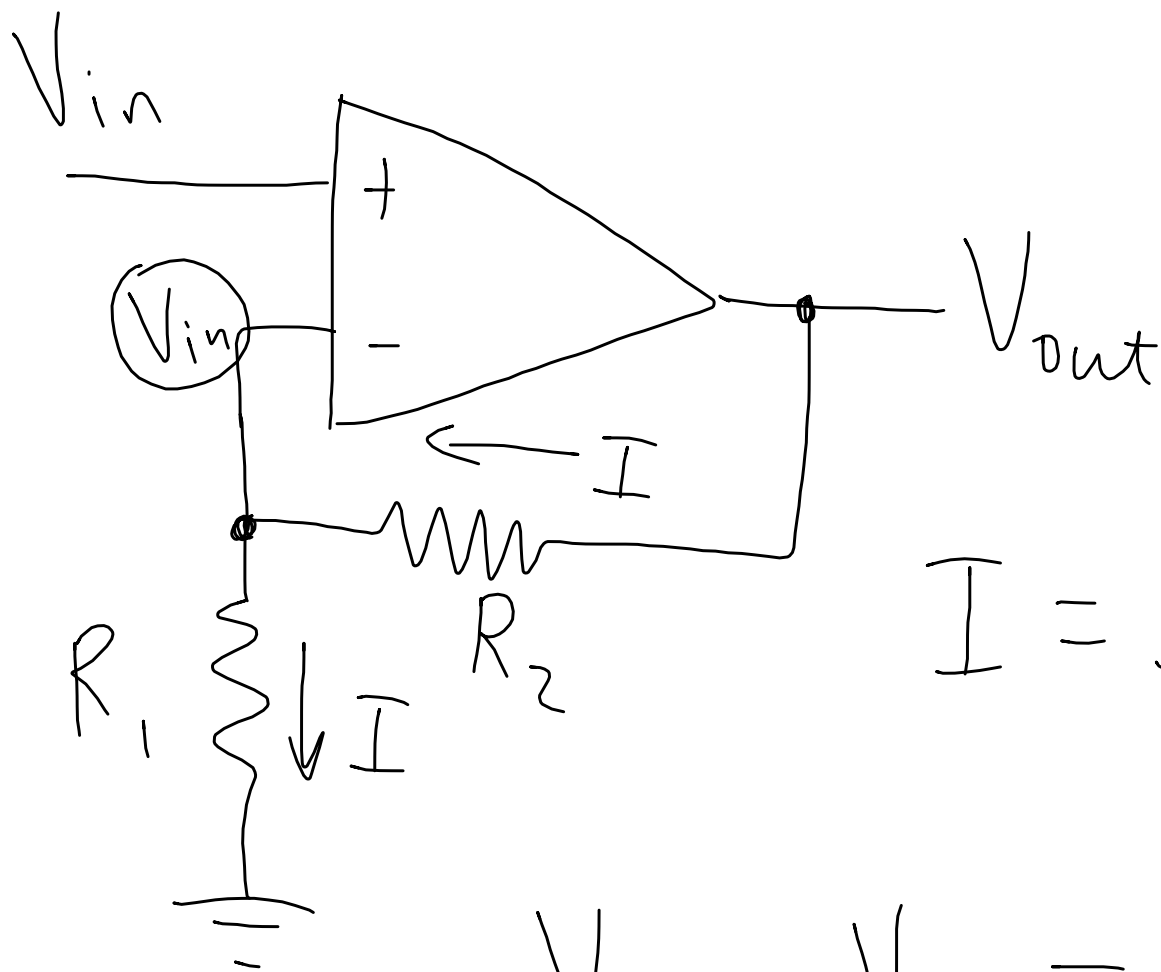


Voltage follower

$$V_{out} = V_{in}$$



Buffer or
line driver



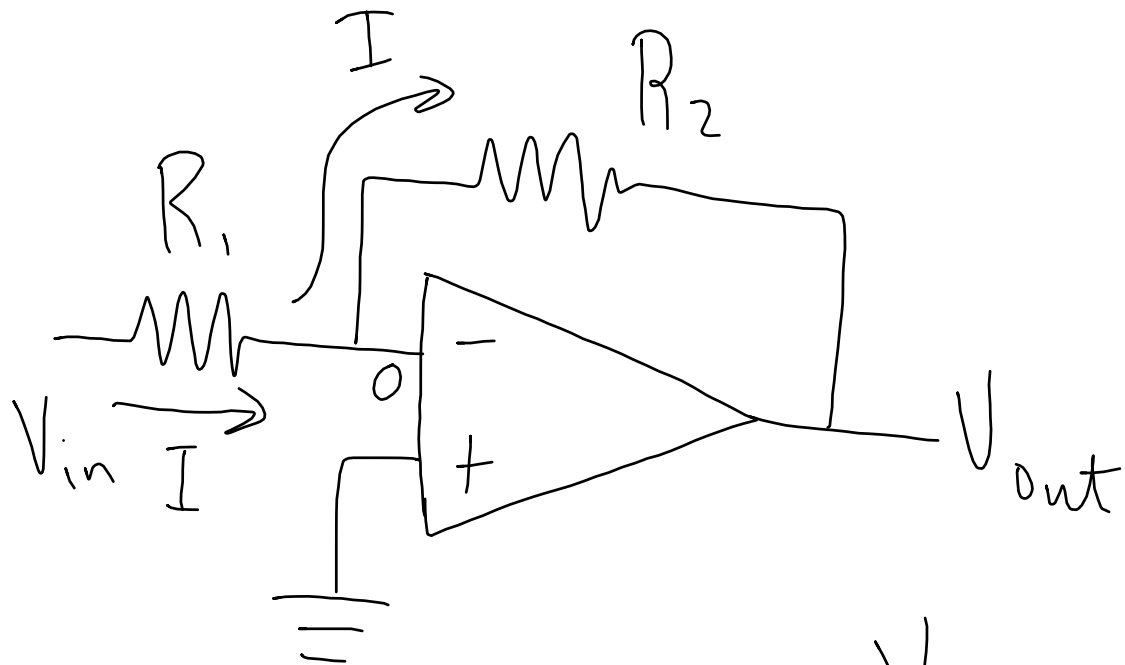
$$I = \frac{V_{in}}{R_1}$$

$$V_{out} - V_{in} = I R_2$$

$$V_{out} - V_{in} = V_{in} \frac{R_2}{R_1}$$

$$\frac{V_{out}}{V_{in}} =$$

$$1 + \frac{R_2}{R_1}$$



$$V_{out} = -IR_2$$

$$I = \frac{V_{in}}{R_1}$$

$$= -\frac{V_{in}}{R_1} R_2$$

$$\frac{V_{out}}{V_{in}} = -\frac{R_2}{R_1}$$