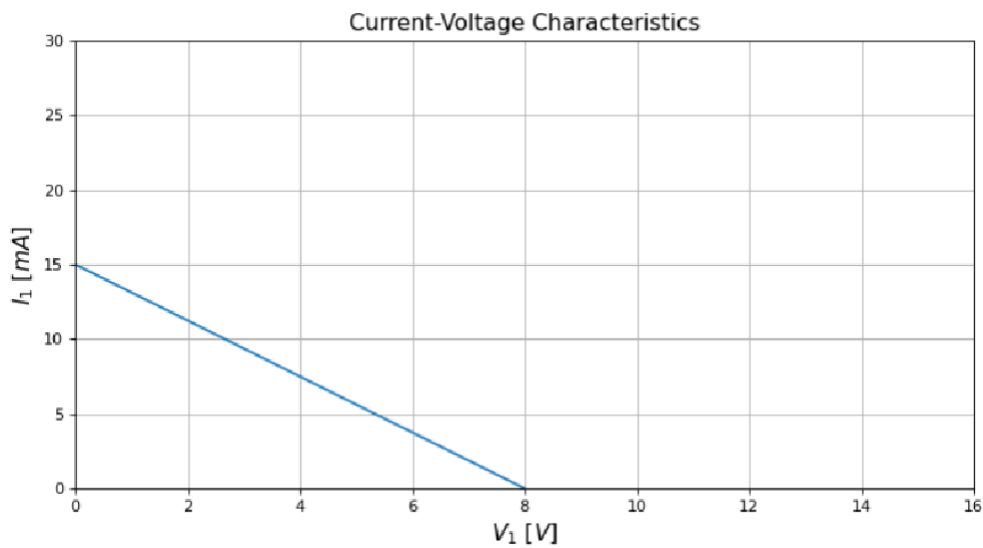


Problem 1



The intercepts of the given plot are (0V, 15mA) and (8V, 0mA).

Find the slope. Complete the following expression for the line in slope-intercept format, then find the value of I_1 when $V_1 = 74V$

Assume the line has the equation $I_1 = mV_1 + b$. the m is the slope and the b is the intercept. Plug the point (0V, 15mA) and (8V, 0mA) into the equation. We get

$$\begin{aligned} b &= 15\text{mA} \\ 8V \cdot m + b &= 0\text{mA} \end{aligned}$$

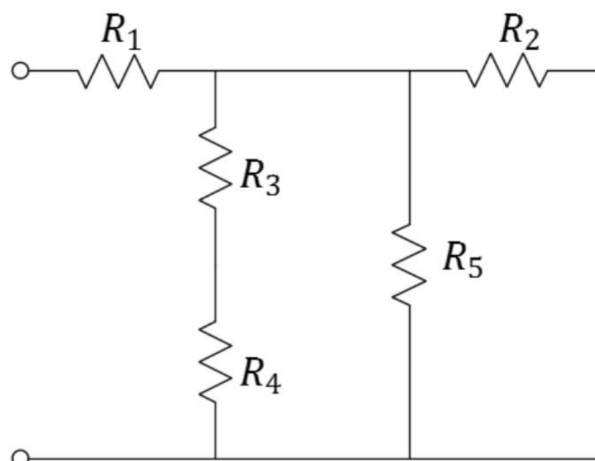
solving equation, we get

$$b = 15\text{mA} \quad m = -\frac{15 \text{ mA}}{8 \text{ V}} = -1.875 \text{ mA/V}$$

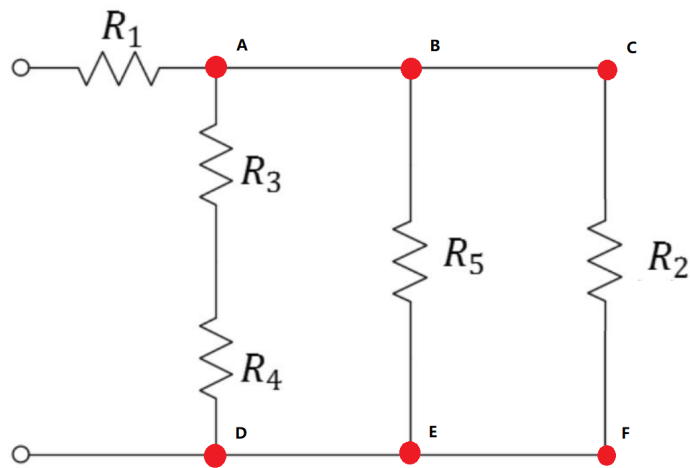
and thus

$$I_1(V_1 = 74) = m \cdot 74V + b = -1.875\text{mA/V} \cdot 74V + 15\text{mA} = \boxed{-123.75\text{mA}}$$

Problem 2



We rearrange the circuit, shown below:



(a)

Neither. From the circuit, $V_{AD} = V_{CF} = V_{R_3} + V_{R_4} = V_{R_2}$. The $V_{R_2} \neq V_{R_3}$, so the R_3 and R_2 are not parallel. From the graph, the R_3 and R_2 does not have same current flowing through them (the are not connected in a wire with no branches)

(b)

Parallel, because from the circuit we could see that $V_{BE} = V_{CF} = V_{R_5} = V_{R_2}$