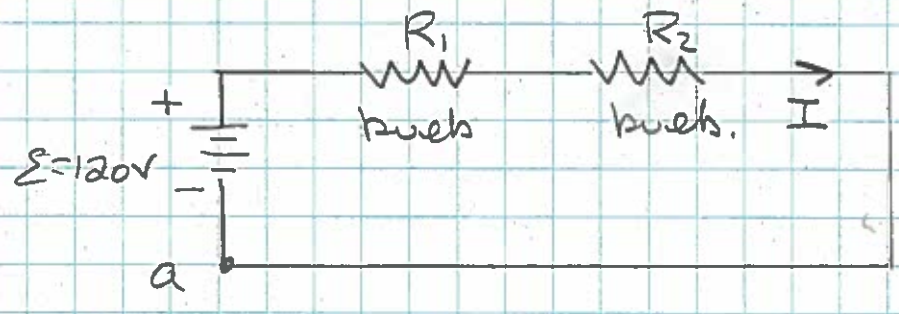
When the problem says "75 W (120 V)" light bulb, it means that the bulb dissipates 75 W of power when it is connected *alone* across a potential $\Delta V = 120\,V$.

So: $P = \frac{\Delta V^2}{R} \Rightarrow R = \frac{\Delta V^2}{P} = \frac{(120\,V)^2}{75\,W} = 192\,\Omega$

Now, for two bulbs in the circuit:



$R_1 = R_2 = 192\,\Omega$

Loop equation a: $\mathcal{E} - IR_1 - IR_2 = 0$

$$I = \frac{\mathcal{E}}{R_1 + R_2} = 0.3125\,A$$

∴ for each bulb:

$$P_1 = P_2 = I^2R_1 = I^2R_2 = \underline{18.75\,W}$$