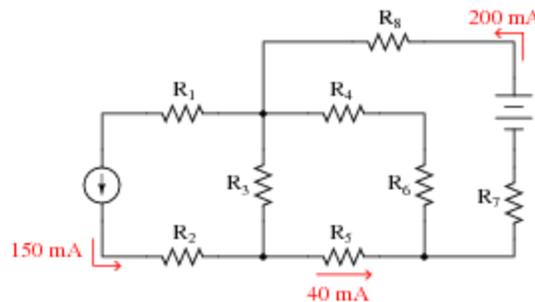


## Physics 12 19-3 Kirchoff's Rules

1. **Gustav Robert Kirchoff** (12 March 1824 - 17 October 1887) was a German physicist who contributed to the fundamental understanding of electrical circuits, spectroscopy, and the emission of black-body radiation by heated objects.

2. Kirchoff's first or junction rule:

At any junction point, the sum of all currents entering the junction must equal the sum of all current leaving the junction.



Note: all current arrows point in the direction of conventional flow!

3. Kirchoff's second or loop rule:

the sum of the changes in potential around any closed path of a circuit must be zero.

$$\sum_{loop} V = 0$$

