12 Resistors in Series and Parallel, Kirchoff's Rules

12.1 Book Notes

For capacitors in series,

$$V_{ax} = IR_1 \qquad V_{xy} = IR_2 \qquad V_{yb} = IR_3 \tag{1}$$

$$V_{ab} = V_{ax} + V_{xy} + V_{yb} = I(R_1 + R_2 + R_3) \tag{2}$$

$$\frac{V_{ab}}{I} = R_1 + R_2 + R_3 \tag{3}$$

$$R_{eq} = R_1 + R_2 + R_3 \tag{4}$$

A similar argument can be made for resistors in parallel, except I is unknown, which add.

- A junction in a circuit is a point where three or more conductors meet. A loop is any closed conducting path.