Notes

Resistive circuits

- o Series
- o Parallel
- o Series-parallel

Series circuits provide a single path for current flow.

If only one path for current to flow between two paths in a circuit, it is a series circuit. The more resistors or load connected in series, the more opposition there is to current flow, the more opposition, the higher the resistance.

Formula: Rt = R1 + R2 + R3; sum of all resistors added together

Parallel circuits provide two or more paths for current flow.

If more than one path between two points in a circuit with two or more resistors it is a parallel circuit. The more resistors connected in parallel, the less opposition there is to current flow, which equals a lower resistance in a circuit. Total resistance decreases because of additional paths provided. The total resistance is always less than the resistance of any branch.

Formula: 1/ Rt= 1/R1 + 1/R2 + 1/R3; divide 1by the resistance (R1, R2, R3…) then add together all values of resistance.

Series-parallel circuits provides a combination of both types

Current flows through the two branches of parallel portion of the circuit, then the current recombines and flows through the series portions.

Formula: Use both formulas to compute for answer. Use the parallel formula first then add the series portion to the total resistance from the parallel