Parallel Circuits

Parallel Resistors
  Voltage is the same
  More than one path for current

Formula for resistors in parallel

Special cases
  Only two resistors  Product over sum formula
  All resistors the same value – Divide one resistor by the number of resistors

Current in a parallel circuit
  Divides according to the size of the resistor.
  Smaller resistor gets the greatest amount of current

Current Divider
  Allows for calculation of branch current without knowing the voltage

Power distribution in Parallel
  Power will be based on the size of the resistor
  Proportional to the amount of branch current

Kirchhoff’s Current Law
  Current entering any point equals the current leaving that point

Current Divider Rule

Voltage Sources in parallel

Troubleshooting Parallel Circuits
  Opens – Depending on the placement of the open, current might cease to flow (if open is in the mainline)

  Shorts – Provides a path around a component, could cause excessive current flow

Voltmeter Loading effect