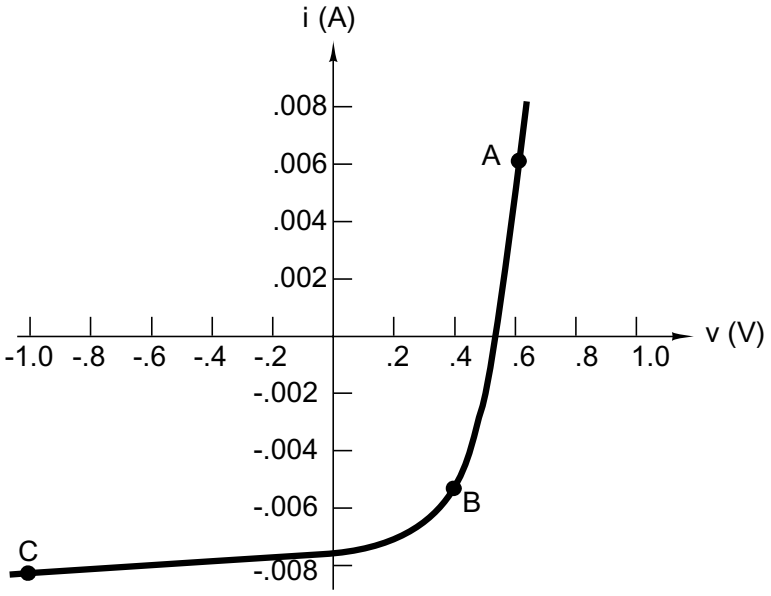
More examples

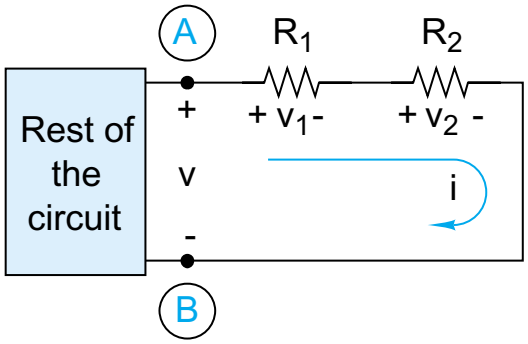


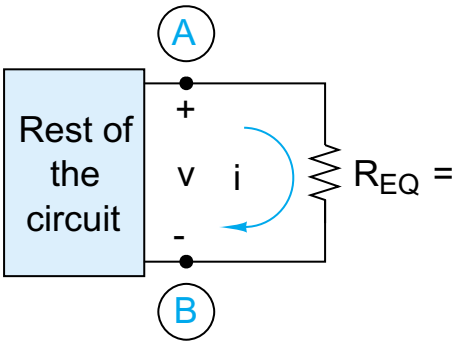
Given a two terminal device with the above current-voltage characteristics, determine the device power when it operates at point A and whether it is absorbing or delivering power. Repeat for B and C.

Equivalent Circuits

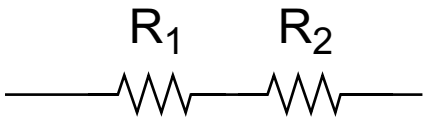
Two circuits are said to be equivalent if they have identical i-v characteristics at a specified pair of terminals

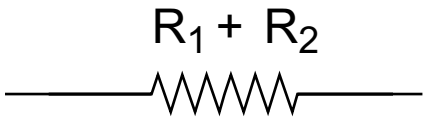
Consider Resistors in Series...



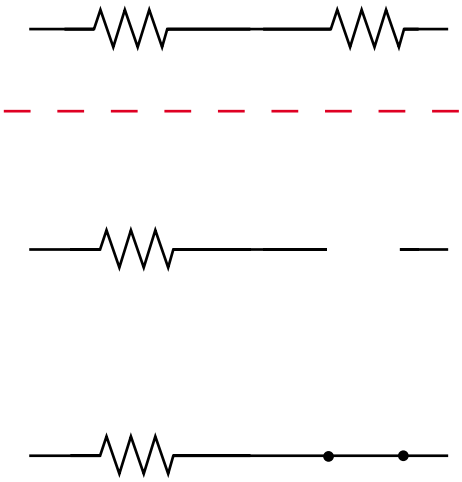


Mnemonics for series resistors

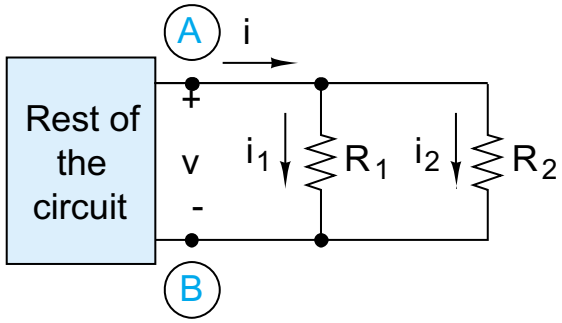


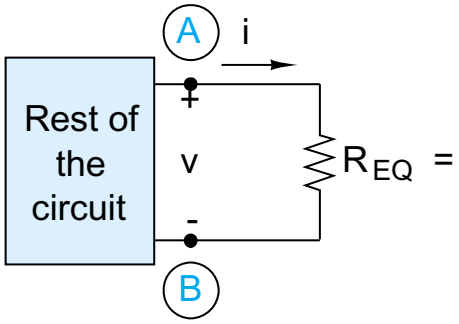


When in a pinch, think about the extremes...

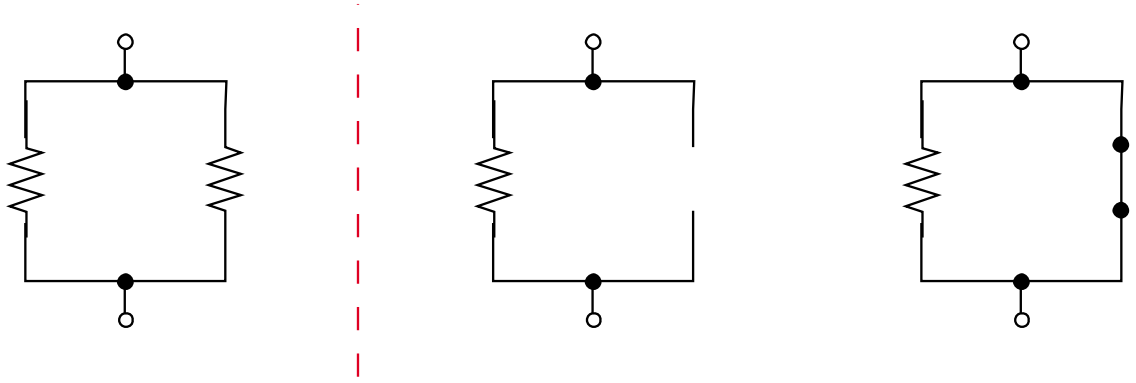


Consider Resistors in Parallel...

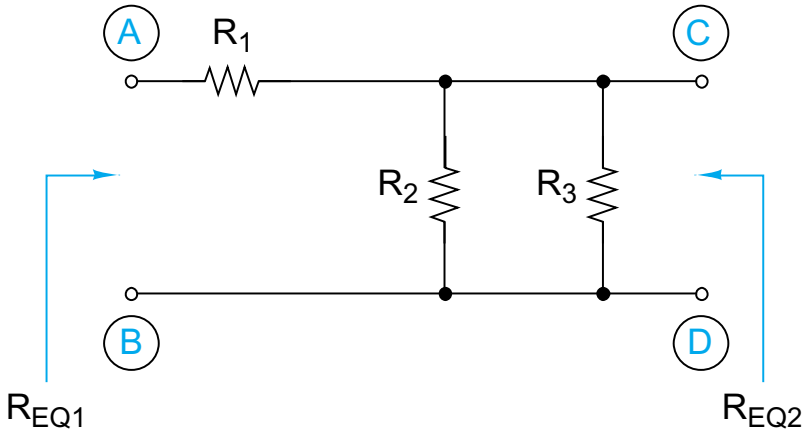




Mnemonics for parallel resistors, again, when in a pinch, think about the extremes...

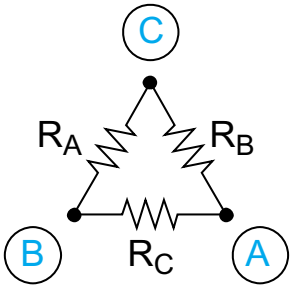


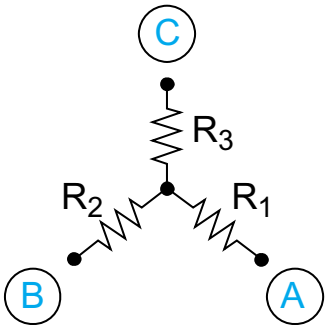
Examples are the lifeblood of lecture



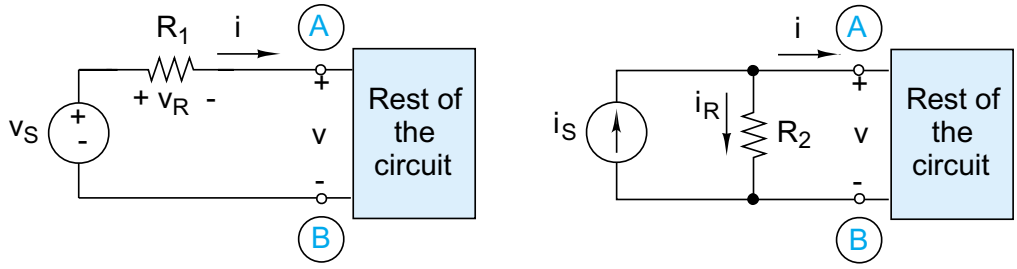
Find the equivalent resistance between AB, repeat for CD

Now let's get challenging, find the equivalent resistance for each pair of terminals in the following circuits:



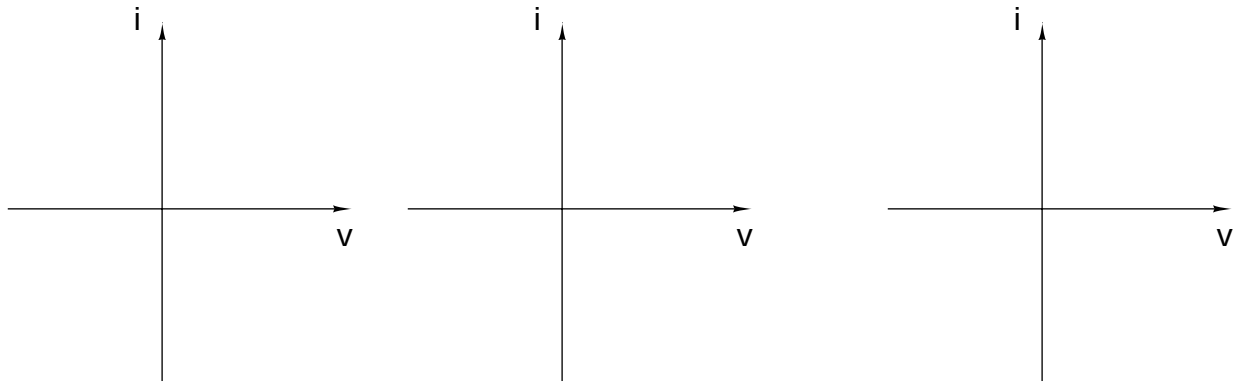


Circuits are as easy as going from A to B...

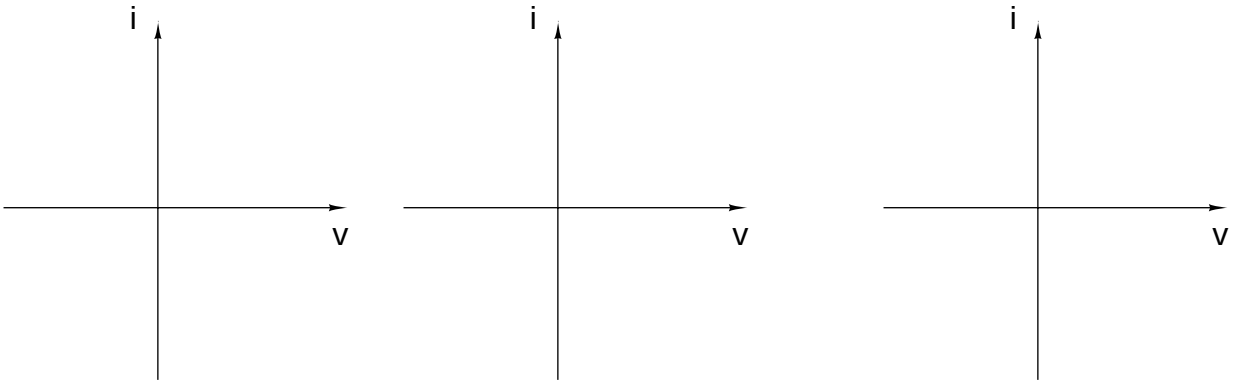


Circuit A Circuit B

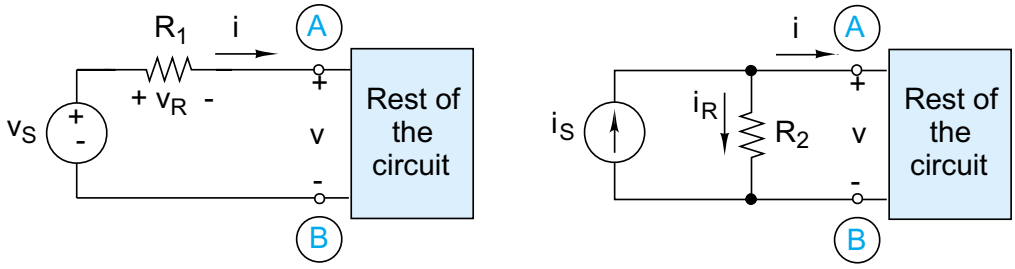
First, consider the i-v relationships for elements in circuit A



Then, consider the i-v relationships for elements in circuit B



Finally, how do we make A=B?



Circuit A Circuit B

In other words,