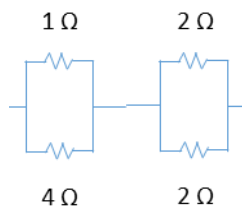


CONCEPT: COMBINING RESISTORS IN SERIES AND PARALLEL

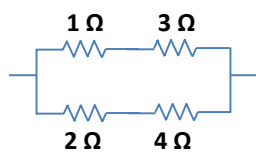
- In Circuit problems, you will need to COLLAPSE / COMBINE resistors into a SINGLE _____ resistors.

SERIES CONNECTION	PARALLEL CONNECTION
- Direct connection, no splits - Equivalent Resistance $\rightarrow R_{eq} = \underline{\hspace{2cm}}$ - Always _____ than individual resistances	- Wire splits, forms a loop - Equivalent Resistance $\rightarrow R_{eq} = \underline{\hspace{2cm}}$ - Always _____ than individual resistances

EXAMPLE 1: What is the equivalent resistance of the following resistors?

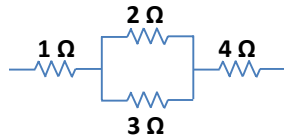


EXAMPLE 2: What is the equivalent resistance of the following resistors?



PRACTICE: EQUIVALENT RESISTANCE #1

What is the equivalent resistance of the following combination of resistors?



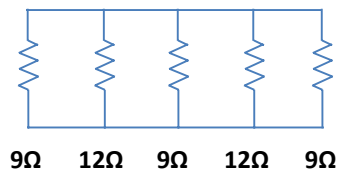
CONCEPT: SHORTCUT EQUATIONS FOR RESISTORS IN PARALLEL

- SHORTCUT #1: If you have TWO resistors in Parallel, you can use:

→ Note this does NOT work if you have more than 2 resistors!

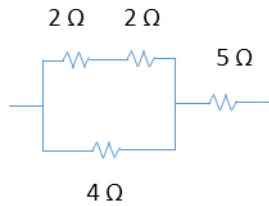
- SHORTCUT #2: If you have resistors of SAME resistance in Parallel, you can use:

EXAMPLE: What is the equivalent resistance of the following network of resistors?



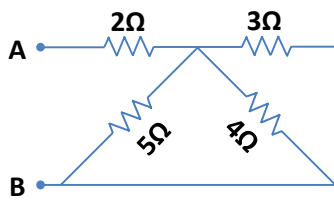
PRACTICE: EQUIVALENT RESISTANCE #2

What is the equivalent resistance of the following combination of resistors?



EXAMPLE: EQUIVALENT RESISTANCE OF WEIRD ARRANGEMENT

What is the equivalent resistance of the following resistors?



PRACTICE: EQUIVALENT RESISTANCE WITH VARIABLES

If every resistor below has resistance R , what is the equivalent resistance of the combination, in terms of R ?

