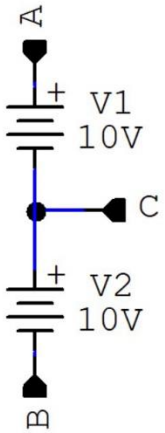
Series Voltage Sources

Series sources add voltage, just like series resistances would add. Assume equal current rating sources:



1

What is the A to B voltage? _____

Which terminal is most positive to all other terminals?_____

From C, which is less positive? _____

From C, which is more negative? _____

Is this series aiding or series opposing (bucking)?_____

Does this increase the maximum current rating? _____

Does this increase the power capacity? _____

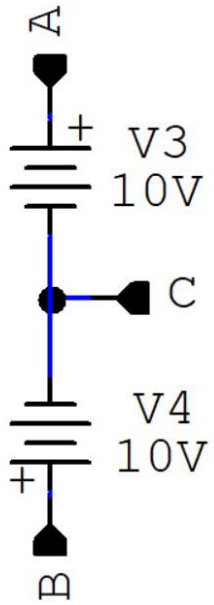
Now assume current capacity of V2 is 2 amperes and V1 is one ampere. Series source currents are the same in each device, just like they would be with resistors.

What is the A to B voltage? _____

What is the total power capacity? _____

With one safe load from B to A, and equal battery resistances, which battery runs hotter? _____

Voltages from series sources add. Assume equal current rating sources:



2

What is the A to B voltage? _____

Which terminal is most negative to all other terminals? _____

From C, which is less positive? _____

From C, which terminal is more positive? _____

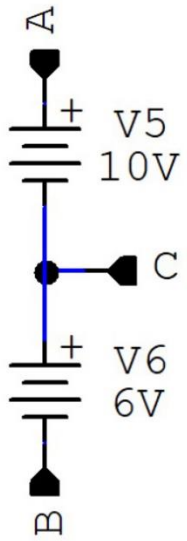
Is this series aiding or series opposing (bucking)? _____

Does this increase the maximum current rating? _____

Does this increase the power capacity? _____

Which two terminals can we safely connect together? _____

What changes if we connect any safe terminals? _____



#3

What is the A to B voltage? _____

Which terminal is most negative to all other terminals? _____

From C, which is less positive? _____

From C, which terminal is more positive? _____

Is this series aiding or series opposing (bucking)? _____

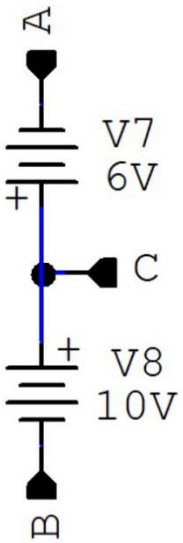
Does this increase the maximum current rating? _____

Does this increase the power capacity? _____

Which two terminals can we safely connect together? _____

What changes if we connect any safe terminals? _____

Now does this increase the power capacity? _____



#4

What is the A to B voltage? _____

Which terminal is most negative to all other terminals? _____

From C, which is less positive? _____

From C, which terminal is more positive? _____

Is this series aiding or series opposing (bucking)? _____

Does this increase the maximum current rating? _____

Does this increase the power capacity? _____

Which two terminals can we safely connect together? _____

What changes if we connect any safe terminals? _____

Now does this increase the power capacity? _____