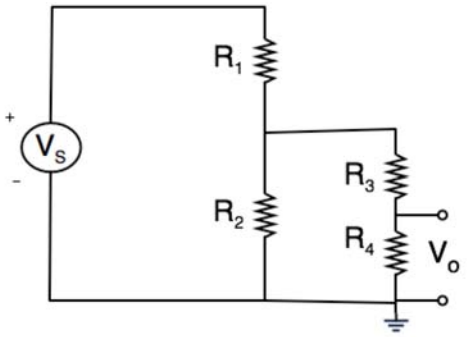
Problem Wk.9.3.4: Thevenin divider

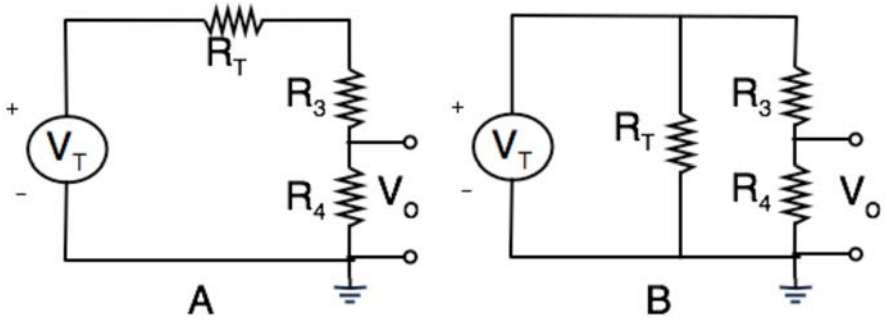
This problem considers how to use Thevenin equivalents to analyze the combination of two resistor divider circuits.

1. Consider the following circuit:



Assume that R1 = R2 = R3 = R4, what is the ratio V_o/V_s?

2. Let's replace the part of the circuit including the voltage source and R1 and R2 with its Thevenin equivalent (whose ouyput terminals connect to R3 and ground). The resulting circuit is one of these two circuits:



All four answers below must be entered before checking. All four answers will be marked incorrect when checked until all four answers are entered correctly. Assume that $V_S=10$ and all the resistors are 1000 Ohm.

Which circuit is the correct one? (Enter A or B):

What is the Thevenin voltage source V_T? (Enter float) Volt.

What is the value of the Thevenin resistance R_T>? (Enter float) Ohm.

What is the value of V_o? (Enter float) Volt.

6.01SC Introduction to Electrical Engineering and Computer Science

Spring 2011