73. (a) We reduce the parallel pair of identical 2.0 Ω resistors (on the right side) to $R' = 1.0$ Ω, and we reduce the series pair of identical 2.0 Ω resistors (on the upper left side) to $R'' = 4.0$ Ω. With R denoting the 2.0 Ω resistor at the bottom (between V_2 and V_1), we now have three resistors in series which are equivalent to

$$R + R' + R'' = 7.0\ \Omega$$

across which the voltage is 7.0 V (by the loop rule, this is $12\,\text{V} - 5.0\,\text{V}$), implying that the current is 1.0 A (clockwise). Thus, the voltage across R' is $(1.0\ \text{A})(1.0\ \Omega) = 1.0$ V, which means that (examining the right side of the circuit) the voltage difference between *ground* and V_1 is $12 - 1 = 11$ V. Noting the orientation of the battery, we conclude $V_1 = -11$ V.

(b) The voltage across R'' is $(1.0\ \text{A})(4.0\ \Omega) = 4.0$ V, which means that (examining the left side of the circuit) the voltage difference between *ground* and V_2 is $5.0 + 4.0 = 9.0$ V. Noting the orientation of the battery, we conclude $V_2 = -9.0$ V. This can be verified by considering the voltage across R and the value we obtained for V_1.