69. The voltage across the rightmost resistors is $V_{12} = (1.4\text{ A})(8.0\ \Omega + 4.0\ \Omega) = 16.8$ V, which is equal to V_{16} (the voltage across the 16 Ω resistor, which has current equal to $V_{16}/(16\ \Omega) = 1.05$ A). By the junction rule, the current in the rightmost 2.0 Ω resistor is $1.05 + 1.4 = 2.45$ A, so its voltage is $V_2 = (2.0\ \Omega)(2.45\text{ A}) = 4.9$ V. The loop rule tells us the voltage across the 2.0 Ω resistor (the one going "downward" in the figure) is $V_2' = V_2 + V_{16} = 21.7$ V (implying that the current through it is $i_2' = V_2'/(2.0\ \Omega) = 10.85$ A). The junction rule now gives the current in the leftmost 2.0 Ω resistor as $10.85 + 2.45 = 13.3$ A, implying that the voltage across it is $V_2'' = (13.3\text{ A})(2.0\ \Omega) = 26.6$ V. Therefore, by the loop rule, $\mathcal{E} = V_2'' + V_2' = 48.3$ V.