

7. We can find the equivalent series resistance for the three resistors connected in series by taking their sum or

$$R_s = R_1 + R_2 + R_3$$

$$R_s = (20 + 70 + 50) \Omega = 140 \Omega$$

We may find the current using Ohm's Law as

$$I = \Delta V / R$$

$$I = 120 \text{ V} / 140 \Omega = 0.86 \text{ A}$$

Thus the battery supplies 0.86 A. This also represents the current in each of the resistors, because they are connected in series, and the current is the same for all elements of a series circuit.