Given: A cubic network has identical resistors, each with a resistance \( r \). A current \( I \) enters the network at \( A \) and leaves at \( G \).

Find current \( I_1 \) and \( I_2 \) in terms of the total current \( I \) through the network.

A) \( I_1 = \frac{I}{2} \) and \( I_2 = \frac{I}{4} \).

B) \( I_1 = \frac{I}{3} \) and \( I_2 = \frac{I}{3} \).

C) \( I_1 = \frac{I}{3} \) and \( I_2 = \frac{I}{6} \).

By symmetry, at \( A \), \( I \) is equally divided into 3 equal branches. So \( I_1 = \frac{I}{3} \). By symmetry, at \( B \), \( I_1 \) is equally divided into 2 equal branches. So \( I_2 = \frac{I}{2} = \frac{I}{6} \).

Answer C.