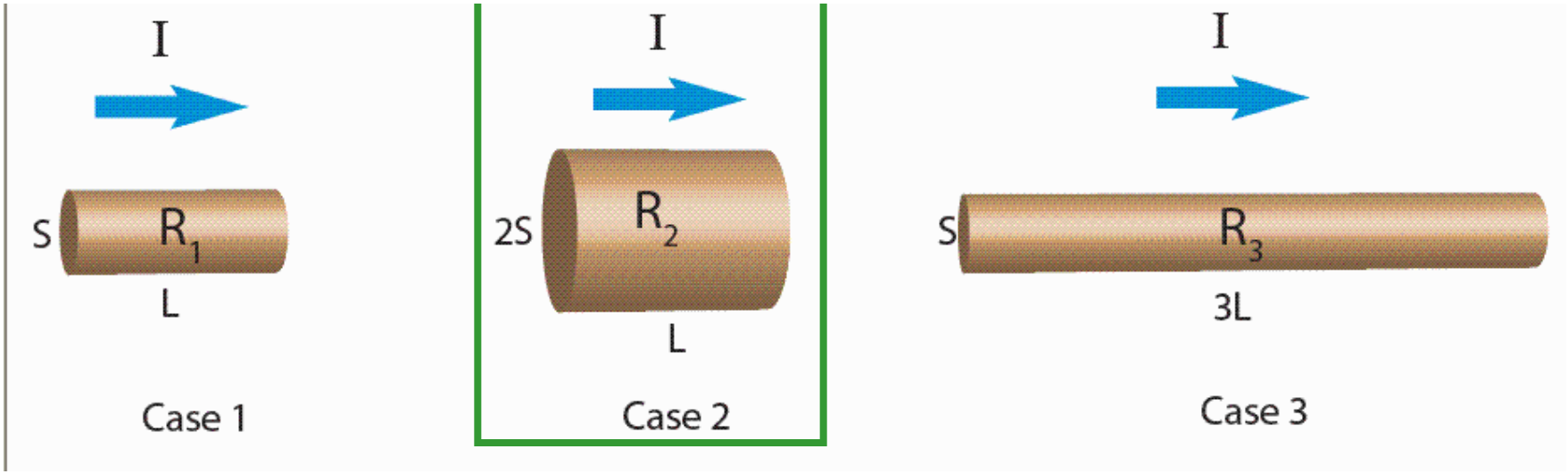
CheckPoint 3

The SAME amount of current I passes through three different resistors. R_2 has twice the cross-sectional area and the same length as R_1, and R_3 is three times as long as R_1 but has the same cross-sectional area as R_1.



In which case is the CURRENT DENSITY through the resistor the smallest?

A. Case 1 ***B.*** Case 2 ***C.*** Case 3

$$J \equiv \frac{I}{A} \rightarrow J_1 = J_3 = 2J_2$$

Same Current $\rightarrow$ $J \propto \frac{1}{A}$