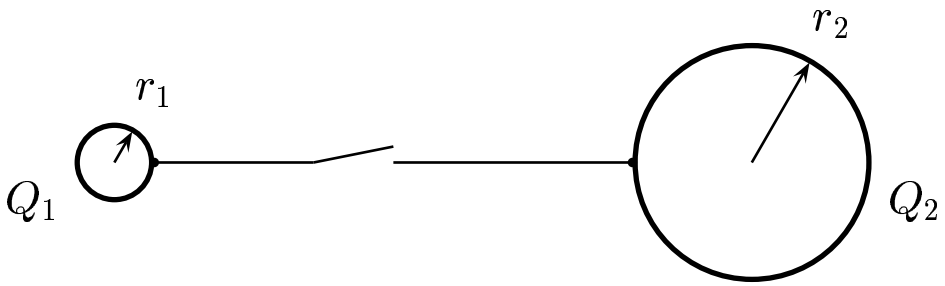
Given: Two conducting spheres separated by a large distance are connected by a wire with an open switch. One is smaller than the other; *i.e.*, $r_1 < r_2$. Each has a positive charge $Q_1 = Q_2 = Q$ on it. Being far apart, the potentials on the spheres are assumed to be approximately given by

$$V_1 \approx k\,\frac{Q_1}{r_1}, \quad \text{and} \quad V_2 \approx k\,\frac{Q_2}{r_2}$$



When the switch is closed, describe the direction of the "apparent flow" of positive charges.

Note: Technically speaking, electrons are the ones which are flowing in the opposite direction.

A) Positive charges flow from sphere #1 to sphere #2.
B) Positive charges flow from sphere #2 to sphere #1.
C) No flow due to same charges on both bodies.

Since $r_1 < r_2$, from the equation above $V_1 > V_2$. The flow of positive charges is from sphere #1 to sphere #2. We mention once again, what really happens is that the negative charges flow from sphere #2 to sphere #1.

Answer **A**.