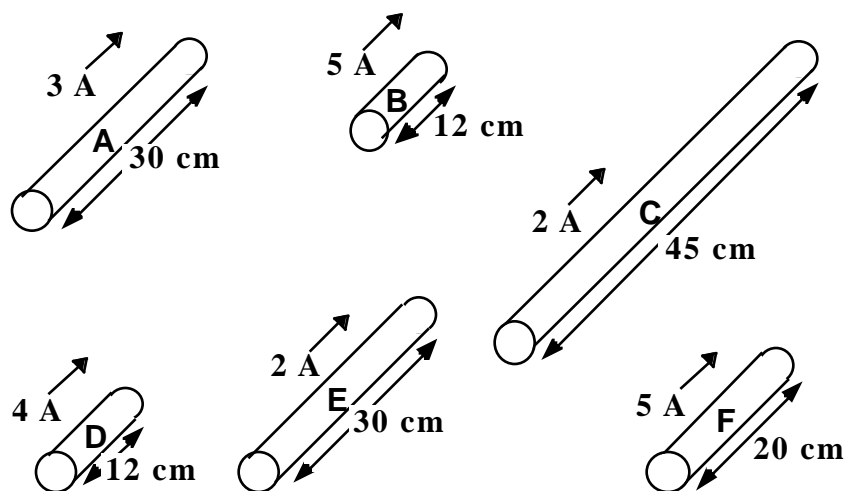


Current Carrying Wires with Different Lengths—Net Charge ¹⁶⁴

The figures below show six segments of wires that are carrying electric currents. In all six cases, the currents are flowing to the right (into the page). As you can see from the values in the figures, the pieces of the wires shown have different lengths, and they are carrying different currents. For the ranking below, we are only interested in the segments of the wires actually shown in the figures.

Rank these segments from greatest to least on the basis of the net electric charge, i.e., the difference in number of positive charges and negative charges in each segment. That is, put first the segment that has the greatest net electric charge on it, and put last the segment that has the smallest net electric charge on it.



Greatest 1_____ 2_____ 3_____ 4_____ 5_____ 6_____ Smallest

Or, all of these segments have the same net charge. _____

Or, the net charge is zero for all of these segments. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1 2 3 4 5 6 7 8 9 10

¹⁶⁴ D. Maloney