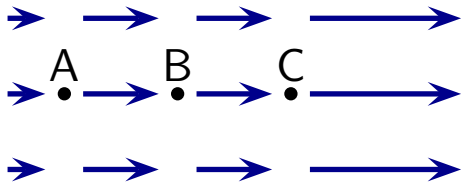
Question 1

An electric field produced by some sources charges is as illustrated.

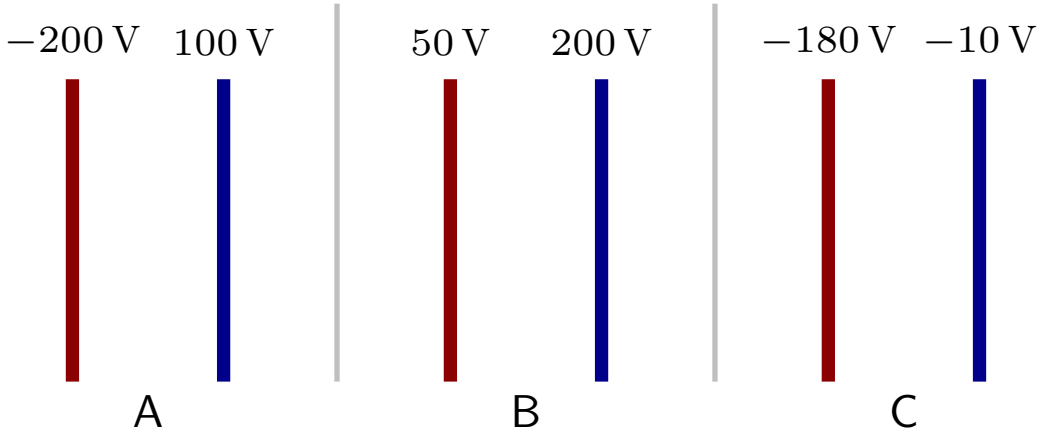


Which of the following ranks the electric potential at the illustrated points?

1. $V_A = V_B = V_C$
2. $V_A > V_B > V_C$
3. $V_A < V_B < V_C$
4. $V_A = V_B < V_C$
5. $V_A < V_B = V_C$

Question 2

Three pairs of uniformly charged infinite plates are separated by the same distance. Each plate is at the illustrated electric potential.

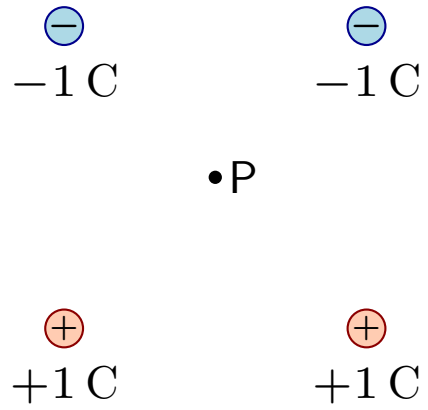


Which of the following is the correct ranking of the magnitude of the electric field between the plates?

1. A $>$ B $>$ C
2. A $>$ C $>$ B
3. B $>$ A $>$ C
4. B $>$ C $>$ A

Question 3

Four source charges are placed at the corners of a square as illustrated. The point P is at the center of the arrangement.

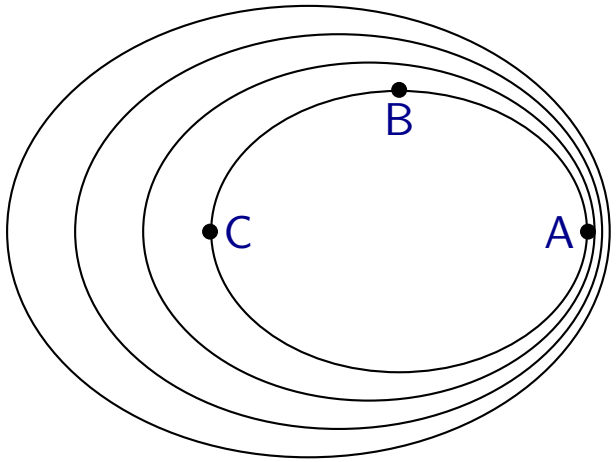


Which of the following is true at point P?

1. $V = 0$ and $\vec{\mathrm{E}} = 0$
2. $V = 0$ and $\vec{\mathrm{E}} \neq 0$
3. $V \neq 0$ and $\vec{\mathrm{E}} = 0$
4. $V \neq 0$ and $\vec{\mathrm{E}} \neq 0$

Question 4

Source charges produce equipotential lines as illustrated.



Which of the following represents the rank of the *magnitude* of the electric field at the illustrated points?

1. $E_{\mathrm{A}} = E_{\mathrm{B}} = E_{\mathrm{C}}$
2. $E_{\mathrm{A}} < E_{\mathrm{B}} < E_{\mathrm{C}}$
3. $E_{\mathrm{C}} < E_{\mathrm{B}} < E_{\mathrm{A}}$
4. $E_{\mathrm{B}} < E_{\mathrm{C}} < E_{\mathrm{A}}$
5. $E_{\mathrm{B}} < E_{\mathrm{A}} < E_{\mathrm{C}}$