## Question 1

In the following separate scenarios two source charges produce electric fields. Consider the magnitude of the field at the location midway between the two source charges.

Case A $\oplus+$


Which of the following describes the rank of the magnitudes of the fields at the midpoint?

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