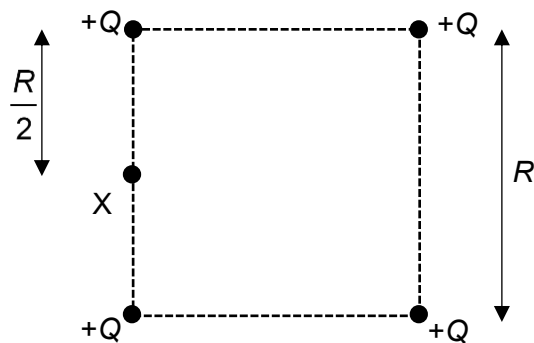


- 21 Four identical point charges are arranged at the corners of a square of length R as shown below.



What is the magnitude of the electric field strength E and the electric potential V at point X?

| | E | V |
|----------|--|---|
| A | $\frac{12}{5} \frac{Q}{\pi\epsilon_0 R^2}$ | $\frac{2}{5} \frac{Q}{\pi\epsilon_0 R}$ |
| B | $\frac{12}{5} \frac{Q}{\pi\epsilon_0 R^2}$ | $\left(1 + \frac{1}{\sqrt{5}}\right) \frac{Q}{\pi\epsilon_0 R}$ |
| C | $\frac{4}{\sqrt{5}^3} \frac{Q}{\pi\epsilon_0 R^2}$ | $\frac{2}{5} \frac{Q}{\pi\epsilon_0 R}$ |
| D | $\frac{4}{\sqrt{5}^3} \frac{Q}{\pi\epsilon_0 R^2}$ | $\left(1 + \frac{1}{\sqrt{5}}\right) \frac{Q}{\pi\epsilon_0 R}$ |

