Electric field

1. State Coulomb’s law.

The force between two point charges is inversely proportional to the square of their separation and directly proportional to the product of their charge.

2. Calculate the force on the small charge in the diagram.

\[ F = \frac{9 \times 10^9 \times 10 \times 10^{-3} \times 5 \times 10^{-9}}{0.1^2} \]

\[ = 45 \text{ N} \]

3. Field lines are used to represent the strength and direction of a field. Draw the field lines for the arrangement of charges below.

4. A potential of 6V is applied to two parallel plates as shown. Calculate the Field strength between the plates.

\[ E = \frac{V}{d} = \frac{6}{0.02} = 300 \text{ V} \text{m}^{-1} \]