

Coulomb's Law

- Force between charges q_1 and q_2 separated a distance r :

Magnitude

$$F = k \frac{q_1 q_2}{r^2}$$

“Coulomb constant”

$$k = 9 \times 10^9 \text{ Nm}^2/\text{C}^2$$

Or:
$$F = \frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r^2}$$

“Permittivity of free space”

$$\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2/\text{Nm}^2$$

Direction

Opposite charges attract, like charges repel