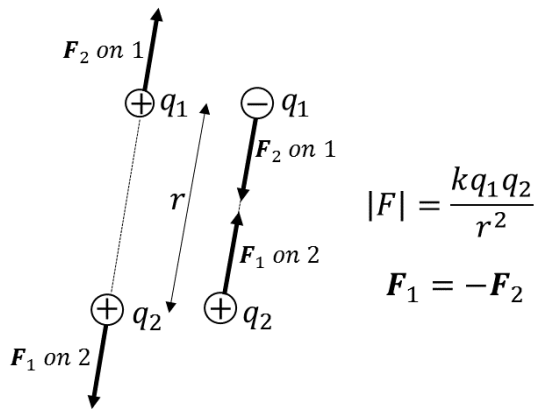
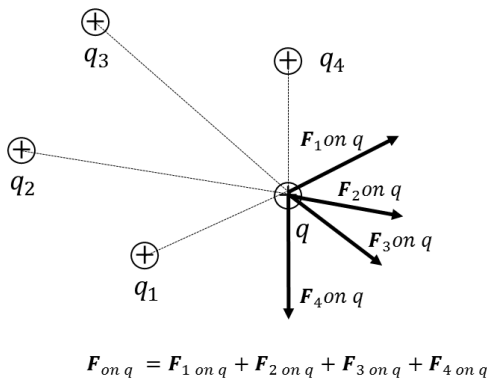


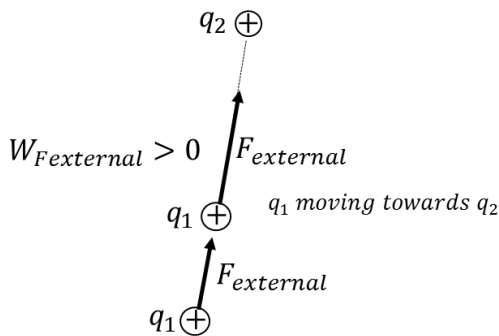
The Coulomb force



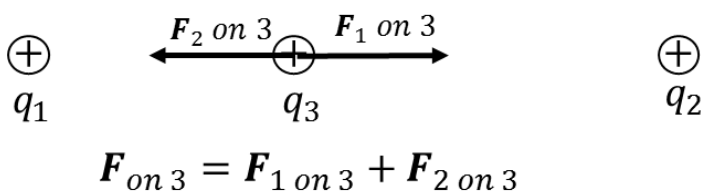
The force exerted by two static point charges on each other is inversely proportional to the square of the distance between them and proportional to the product of the magnitudes of the charges. The force is repulsive for charges of the same sign and attractive for charges of opposite signs. The electrostatic force obeys Newton's third law.



The principle of superposition of forces holds: The net electric force on a charge q is equal to the vector sum of all the forces exerted by any number of charges on q .



To move a positive charge, q_1 towards another positive charge, q_2 , an external agent has to exert an increasing force on q_1 and does positive work. This situation is similar to raising a mass on the Earth's gravitational field.



Along the line connecting two fixed positive point charges, in between the two charges, there is a point where the net force on a third positive charge is zero. That point is closer to the charge with lowest value.

\oplus
 q \oplus
 q

$$\oplus \mathbf{F}_{\text{on } q_0} = 0$$
$$q_0$$

 \oplus
 q \oplus
 q

Four equal point charges are placed in the corners of a square. The net force on a fifth charge placed in the middle of the square is zero.