



Coulomb's Law

Every charged particle exerts a force on every other charged particle in the Universe with a force that is proportional to the product of their charges and inversely proportional to the square of the distance between them.

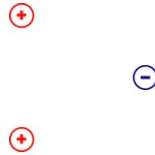
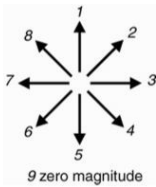
$$|\vec{F}_{\text{elec by 1 on 2}}| = \frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{|\vec{r}|^2}$$

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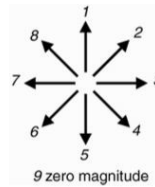
Poll

Which arrow below is in the direction of the net electric force on the electron?



Poll

Which arrow below points in the direction of the net electric force on the electron?



Poll

An alpha particle contains two protons and two neutrons, and has a net charge of $+2e$. The alpha particle is 0.1 m away from a gold nucleus, which has charge $+79e$. Which statement about the electric forces between the particles is correct?

- 1) The force on the gold nucleus by the alpha particle is larger than the force on the alpha particle by the gold nucleus.
- 2) The force on the alpha particle by the gold nucleus is larger than the force on the gold nucleus by the alpha particle.
- 3) The forces are equal in magnitude.
- 4) There is not enough information to determine this.



Poll

An alpha particle moves toward a gold nucleus. As the alpha particle gets closer, the magnitude of the force on the alpha particle

1. Increases
2. Decreases
3. Remains constant