$$\vec{F}_e = k_e \frac{q_1 q_2}{|\vec{r}|^2} \hat{r} = k_e \frac{q_1 q_2}{|\vec{r}|^2} \frac{\vec{r}}{|\vec{r}|} = k_e \frac{q_1 q_2}{|\vec{r}|^3} \vec{r}$$

$$\vec{F}_g = G \frac{m_1 m_2}{r^2} (-\hat{r})$$