$$d\vec{F_q} = k \frac{q \cdot dQ}{r_{12}^2} \hat{r}_{21}$$
 (1)

$$= k \frac{q \cdot \lambda dL}{r_{12}^2} \hat{r}_{21}$$
 (2)

$$= k \frac{q \cdot \lambda dL}{L^2 + x^2} \hat{r}_{21}$$
 (3)

$$=k\frac{q\cdot\lambda dL}{r_{12}^2}\hat{r}_{21}\tag{2}$$

$$=k\frac{q\cdot\lambda dL}{L^2+x^2}\hat{r}_{21}\tag{3}$$

(4)