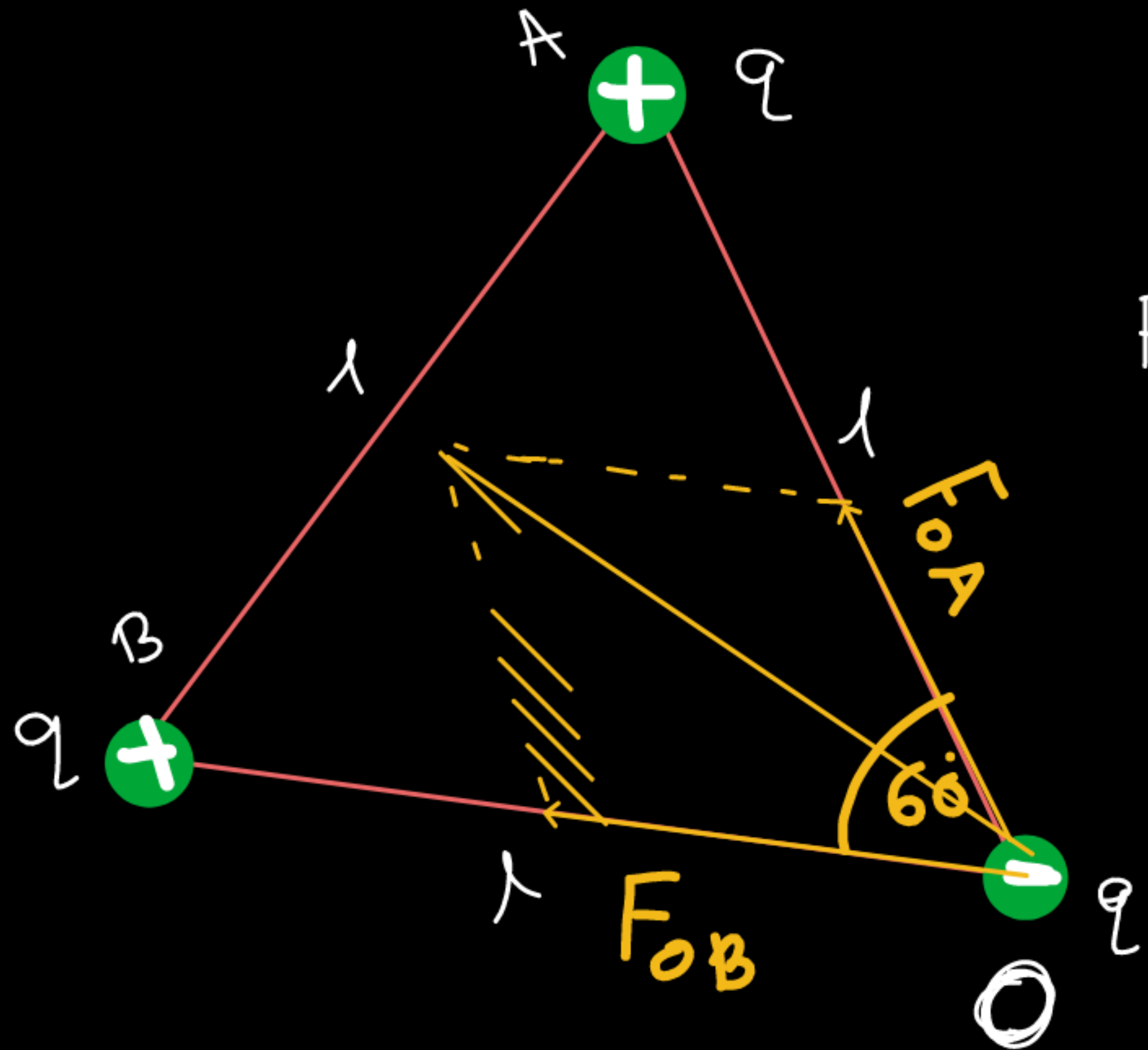


Q) दिए गए आवृत्ति में बिन्दु 'O' पर आरोपित कुल बल का मान ज्ञात करें।



$$F_{OA} = \frac{kq^2}{\lambda^2} = F$$

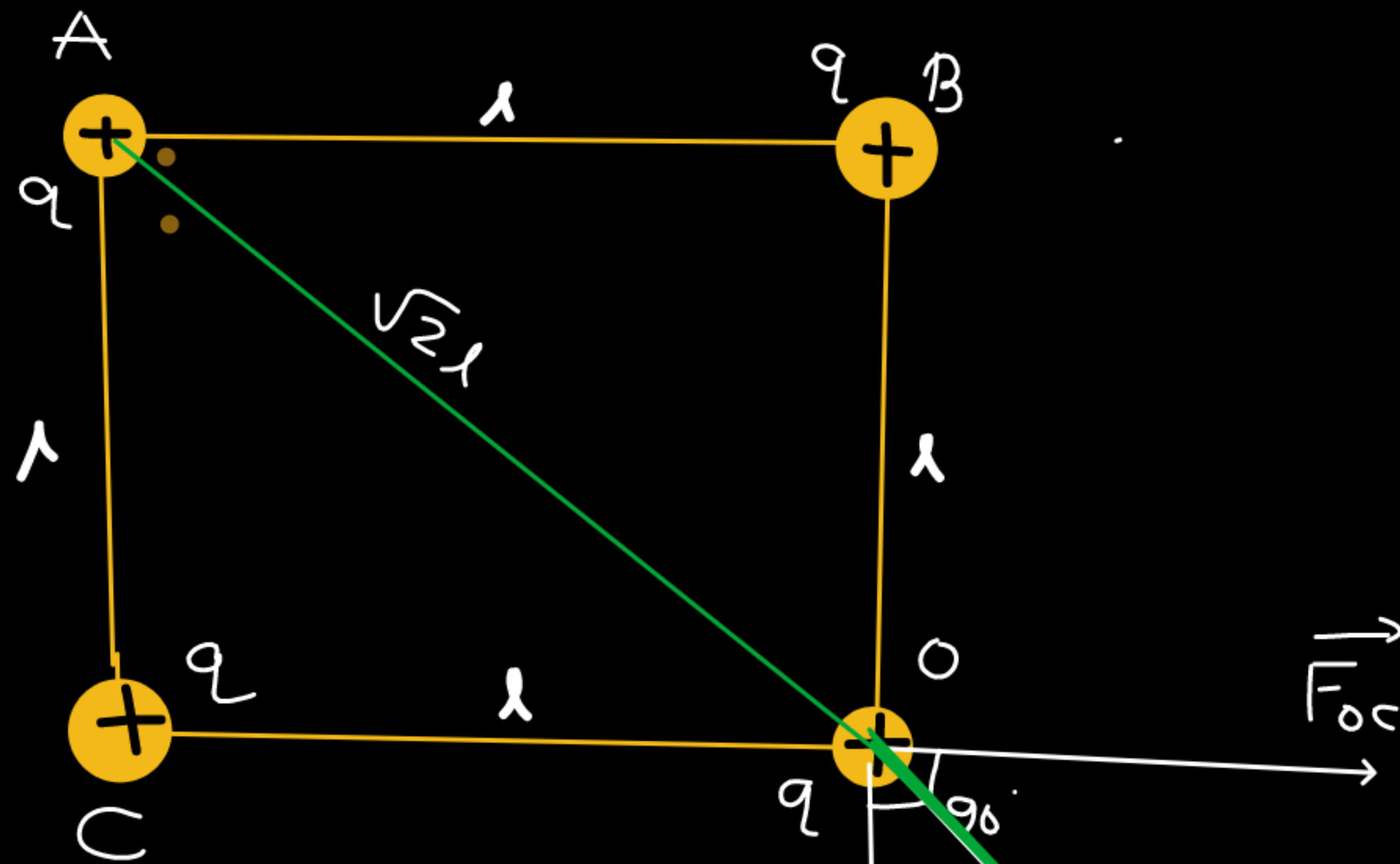
$$F_{OB} = \frac{kq^2}{\lambda^2} = F$$

$$F_{net} = \sqrt{3} F$$

$$= \sqrt{3} \cdot \frac{kq^2}{\lambda^2}$$

Q

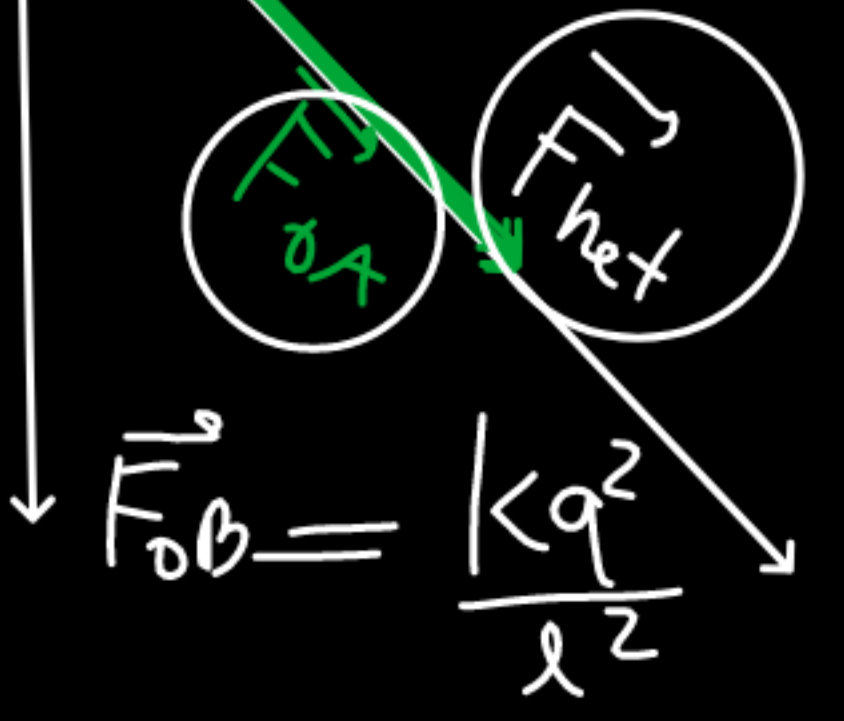
बिन्दु 'O' पर आरोपित कुल बल का मान = ?



$$F_{net} = \sqrt{2} F = \sqrt{2} \frac{kq^2}{l^2}$$

$$F_{OA} = \frac{kq^2}{(\sqrt{2}l)^2} = \frac{kq^2}{2l^2}$$

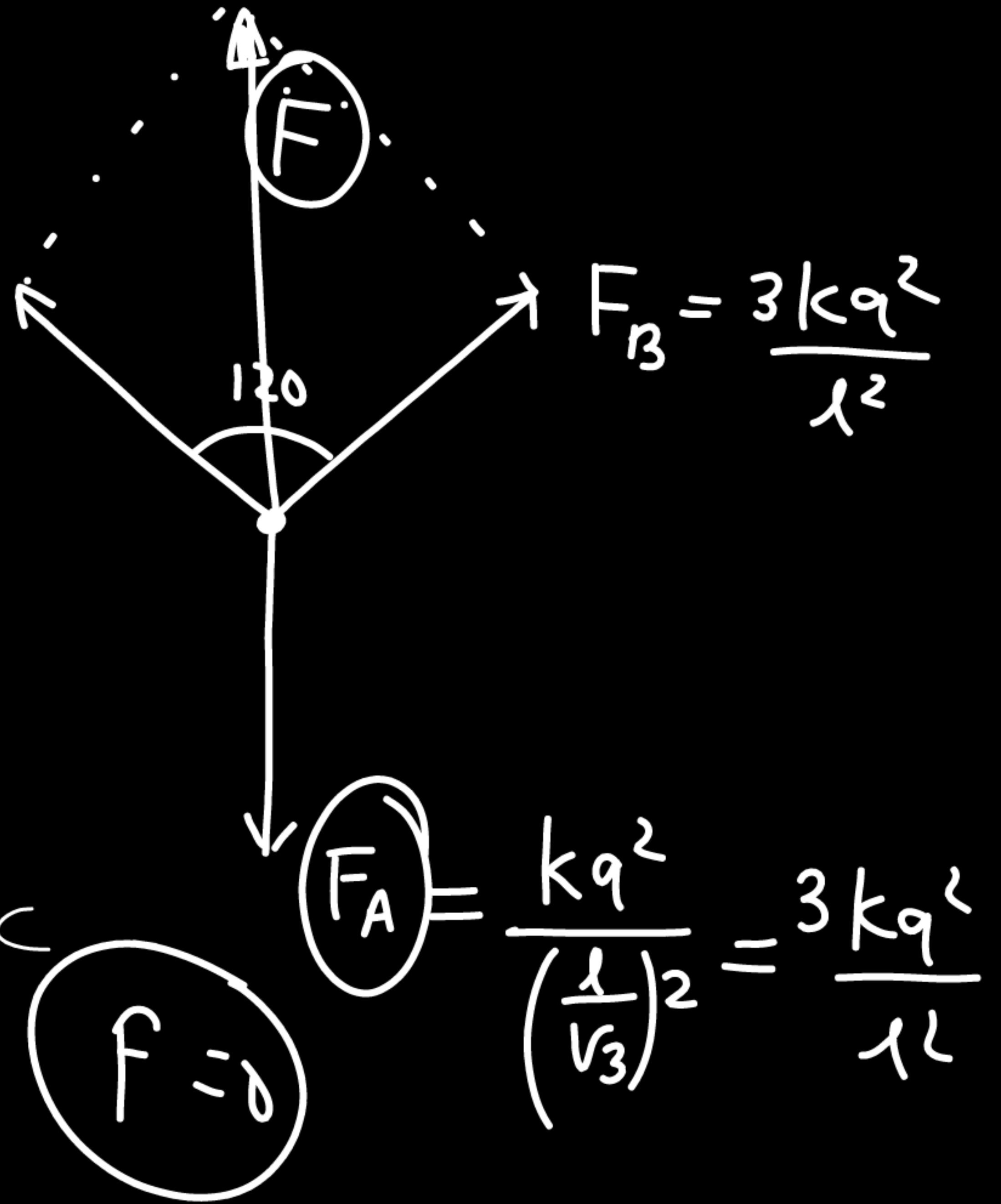
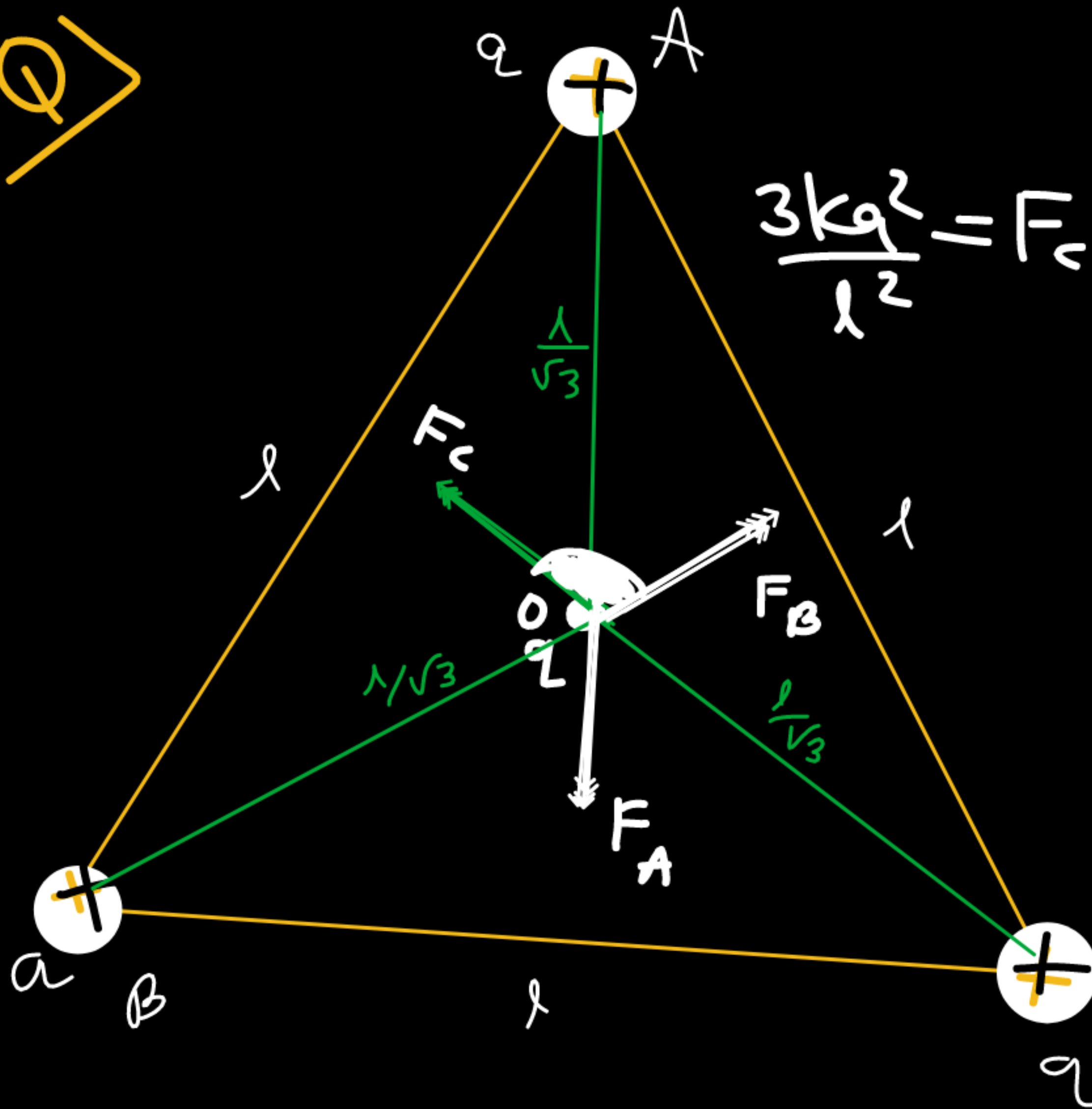
$$\vec{F}_{OC} = \frac{kq^2}{l^2}$$



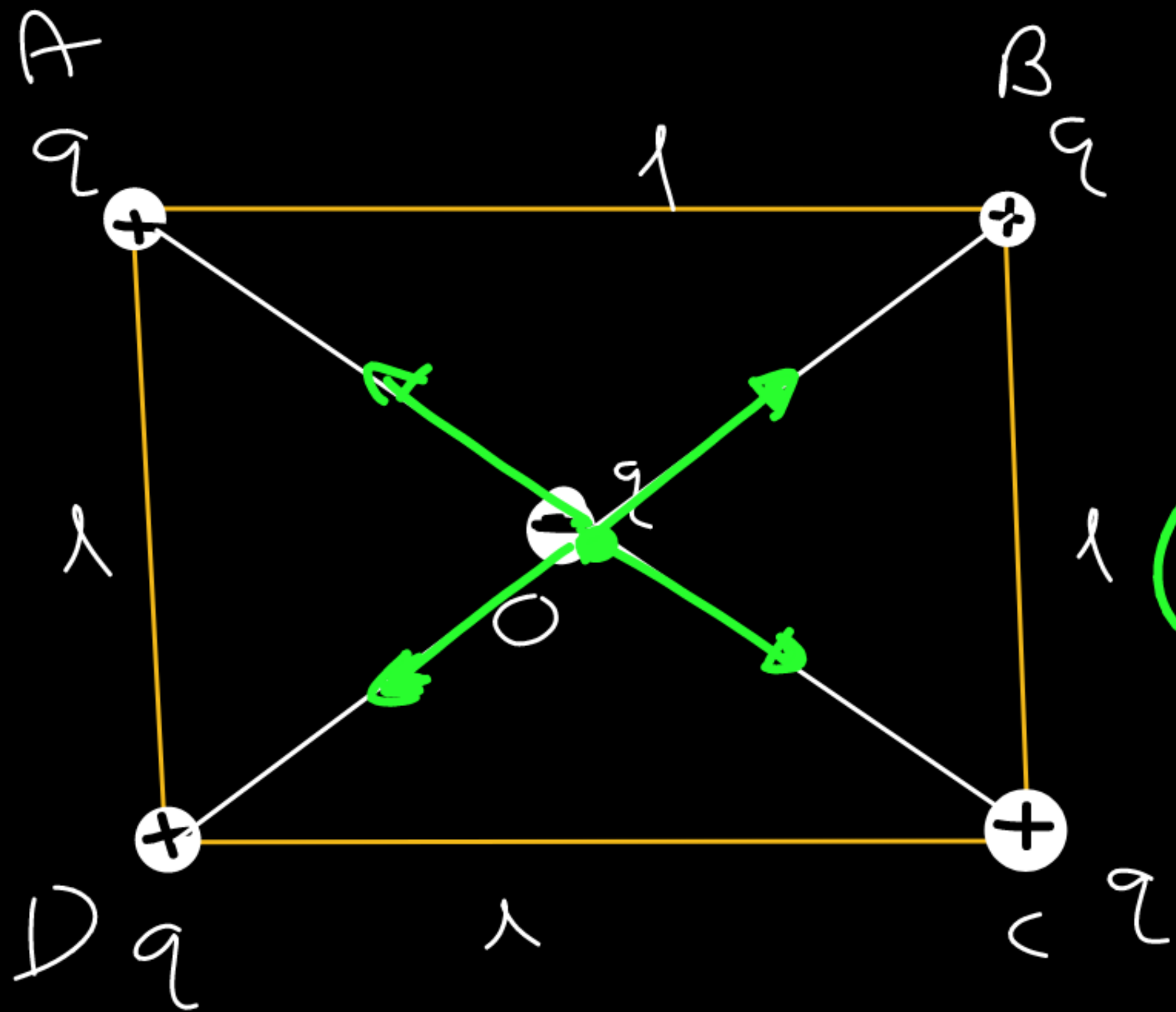
$$F_{total} = F_{net} + F_{OA}$$

$$= \sqrt{2} \frac{kq^2}{l^2} + \frac{kq^2}{2l^2}$$

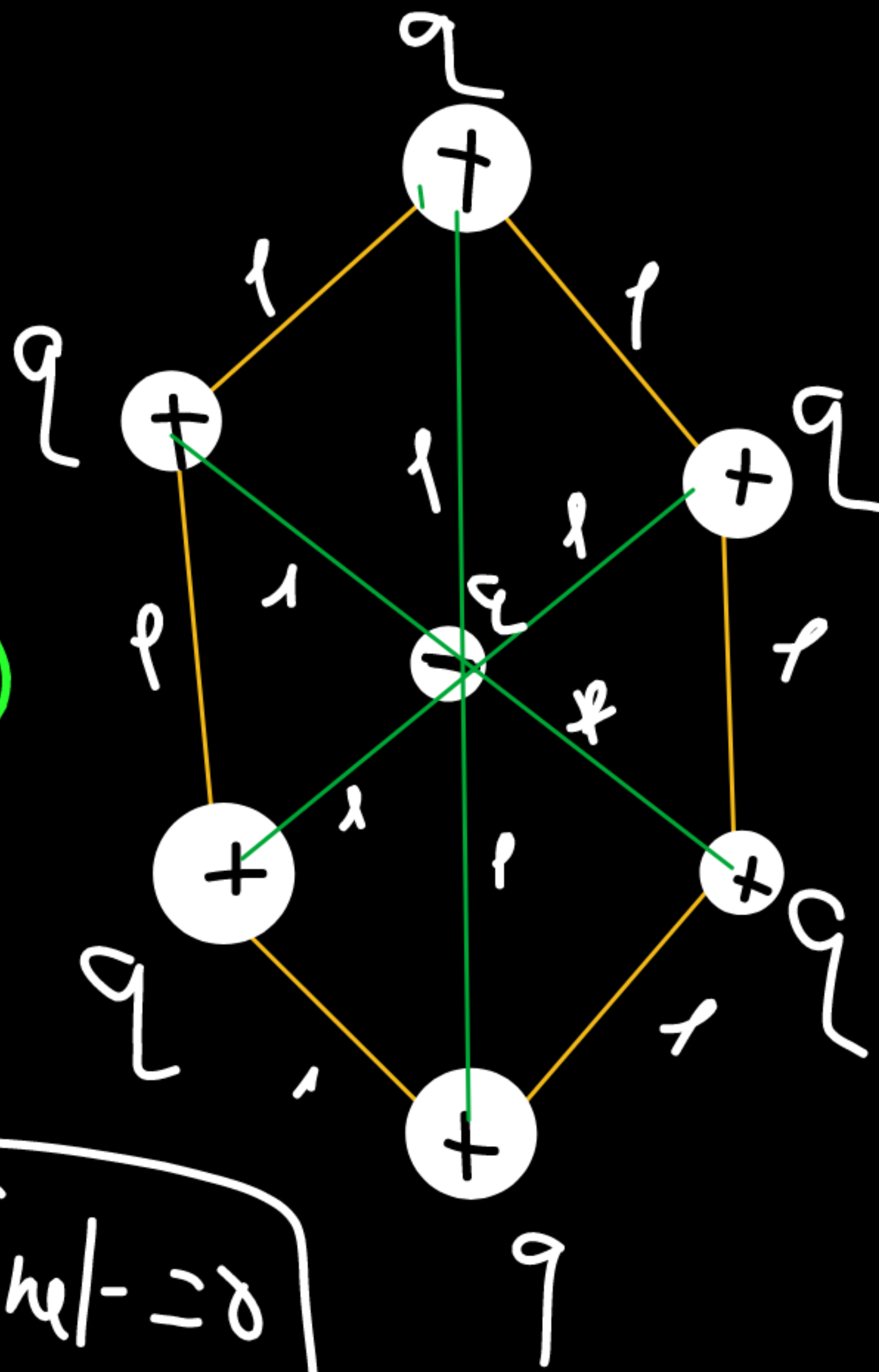
$$= \frac{kq^2}{l^2} \left( \sqrt{2} + \frac{1}{2} \right)$$



(9)



$F = 0$



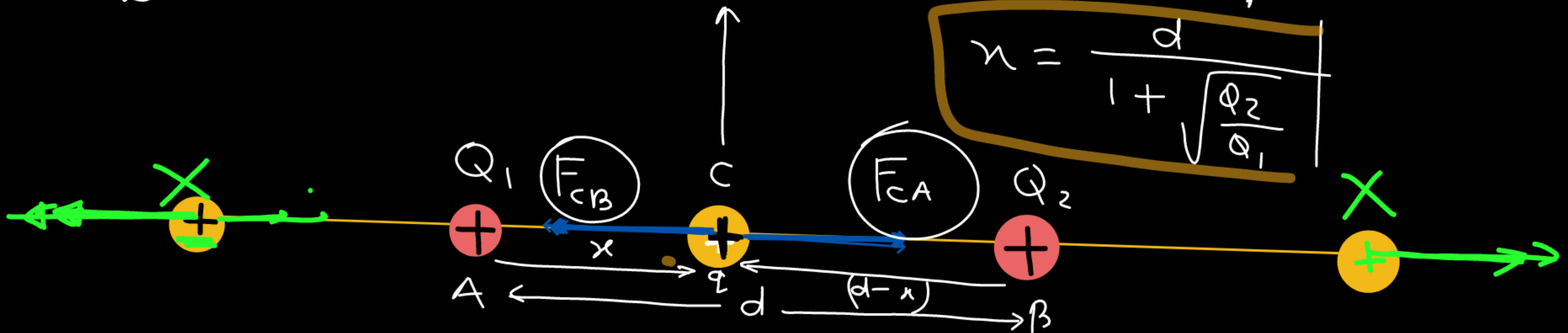
$F_{het} = 0$

(Q)

$$F = 0$$

$$\frac{d}{x} = 1 + \sqrt{\frac{Q_2}{Q_1}}$$

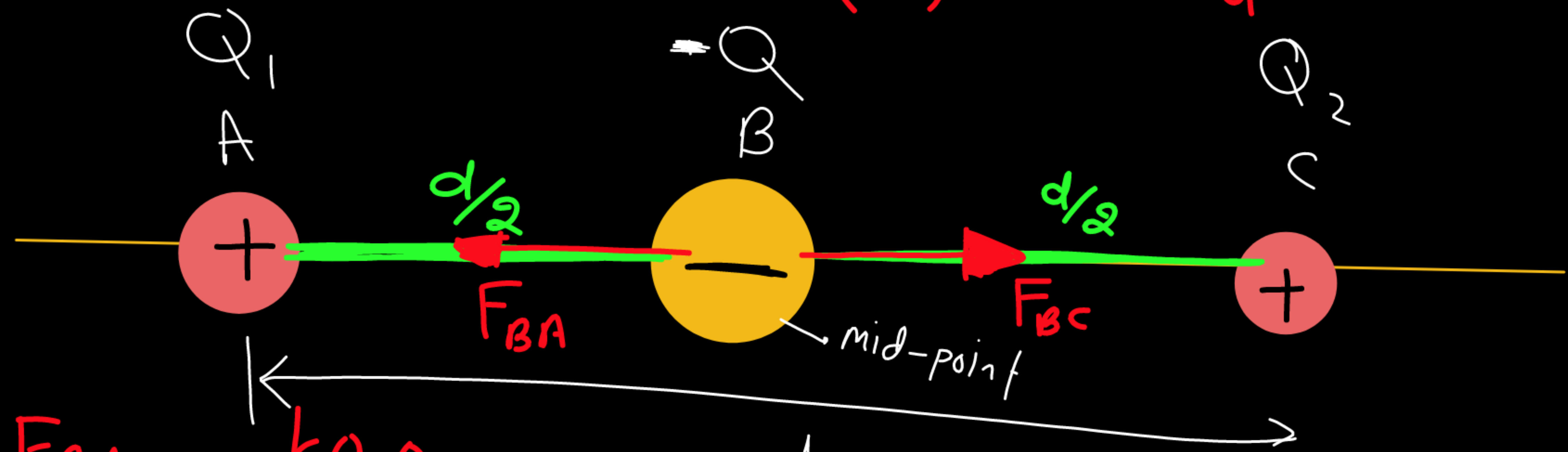
$$x = \frac{d}{1 + \sqrt{\frac{Q_2}{Q_1}}}$$



$$F_{cb} = F_{ca}$$
$$\frac{Q_2 \cdot q}{(d-x)^2} = \frac{Q_1 \cdot q}{x^2}$$
$$\frac{Q_2}{Q_1} = \left(\frac{d-x}{x}\right)^2 = \left(\frac{d}{x} - 1\right)^2$$
$$\sqrt{\frac{Q_2}{Q_1}} = \frac{d}{x} - 1$$

Q

$$F_{BC} = \frac{kQ_2Q}{\left(\frac{d}{2}\right)^2} = \frac{4kQ_2Q}{d^2}$$



$$F_{BA} = \frac{kQ_1Q}{\left(\frac{d}{2}\right)^2} = \frac{4kQ_1Q}{d^2}$$

$$F = \left( \frac{4kQ_2Q}{d^2} - \frac{4kQ_1Q}{d^2} \right)$$

(Q)

