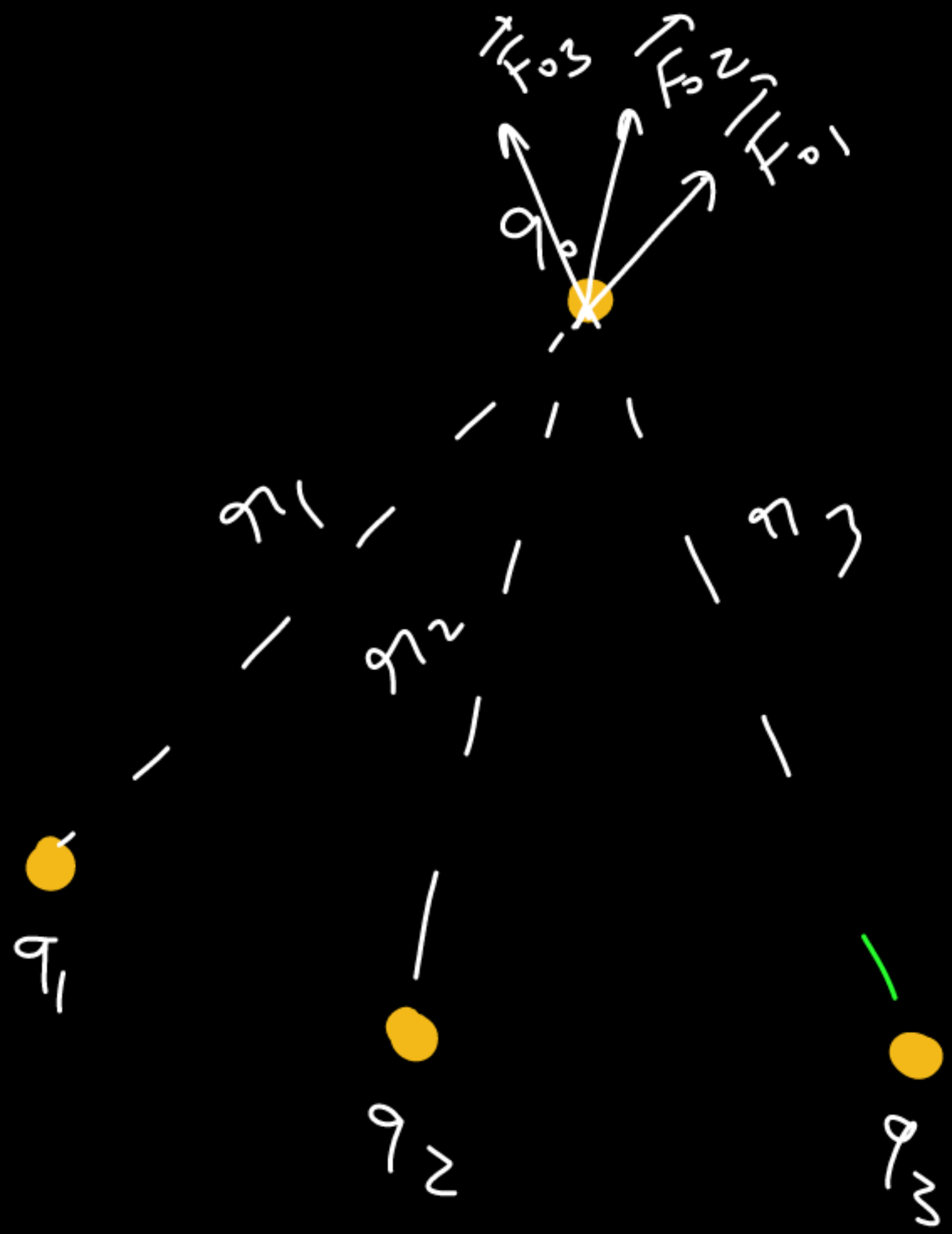




समस्त बिहार, भरेगा हुंकार

# HUNKAR 2025

में आपका स्वागत है

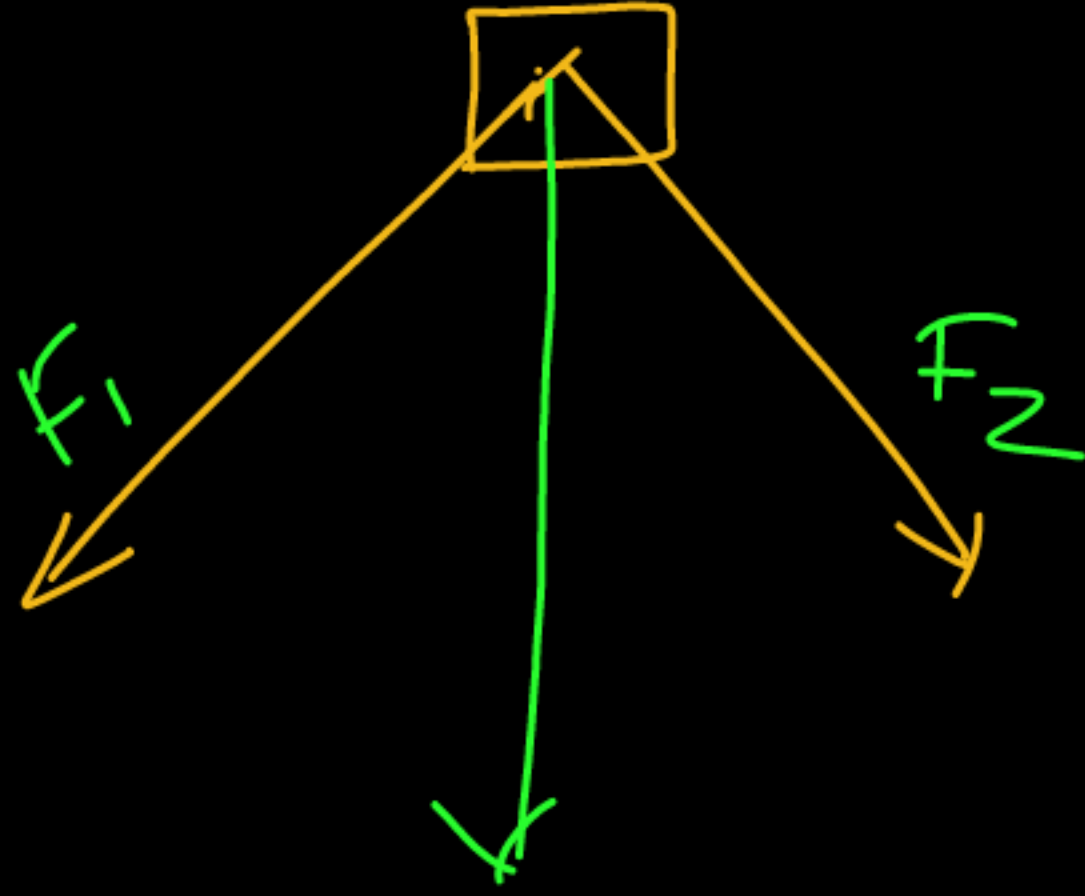
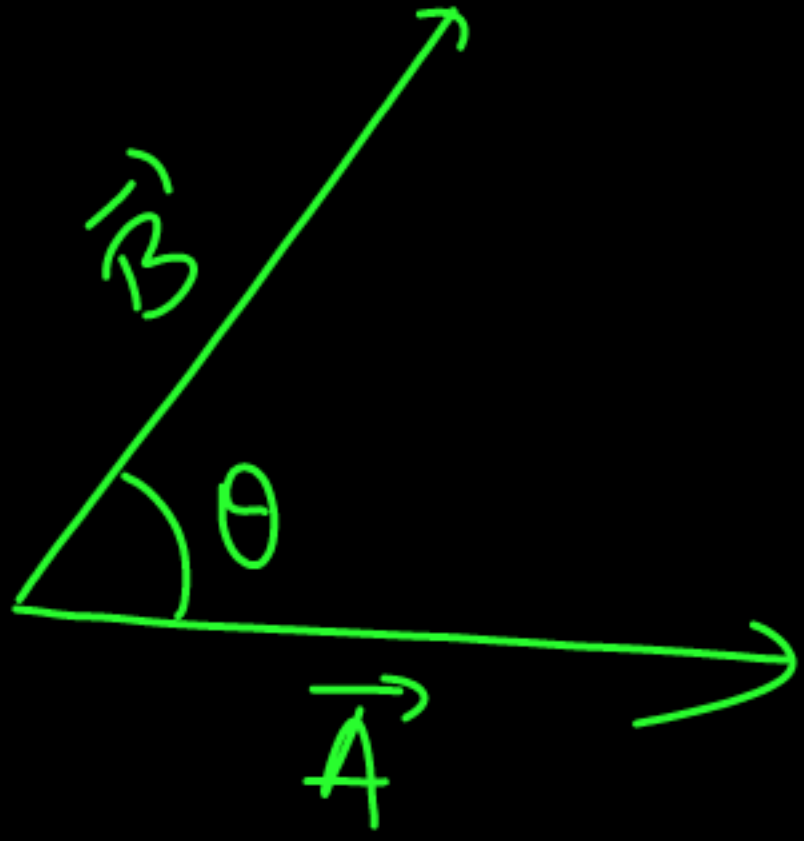


$$|\vec{F}_{01}| = \frac{k q_1 q_0}{r_1^2}$$

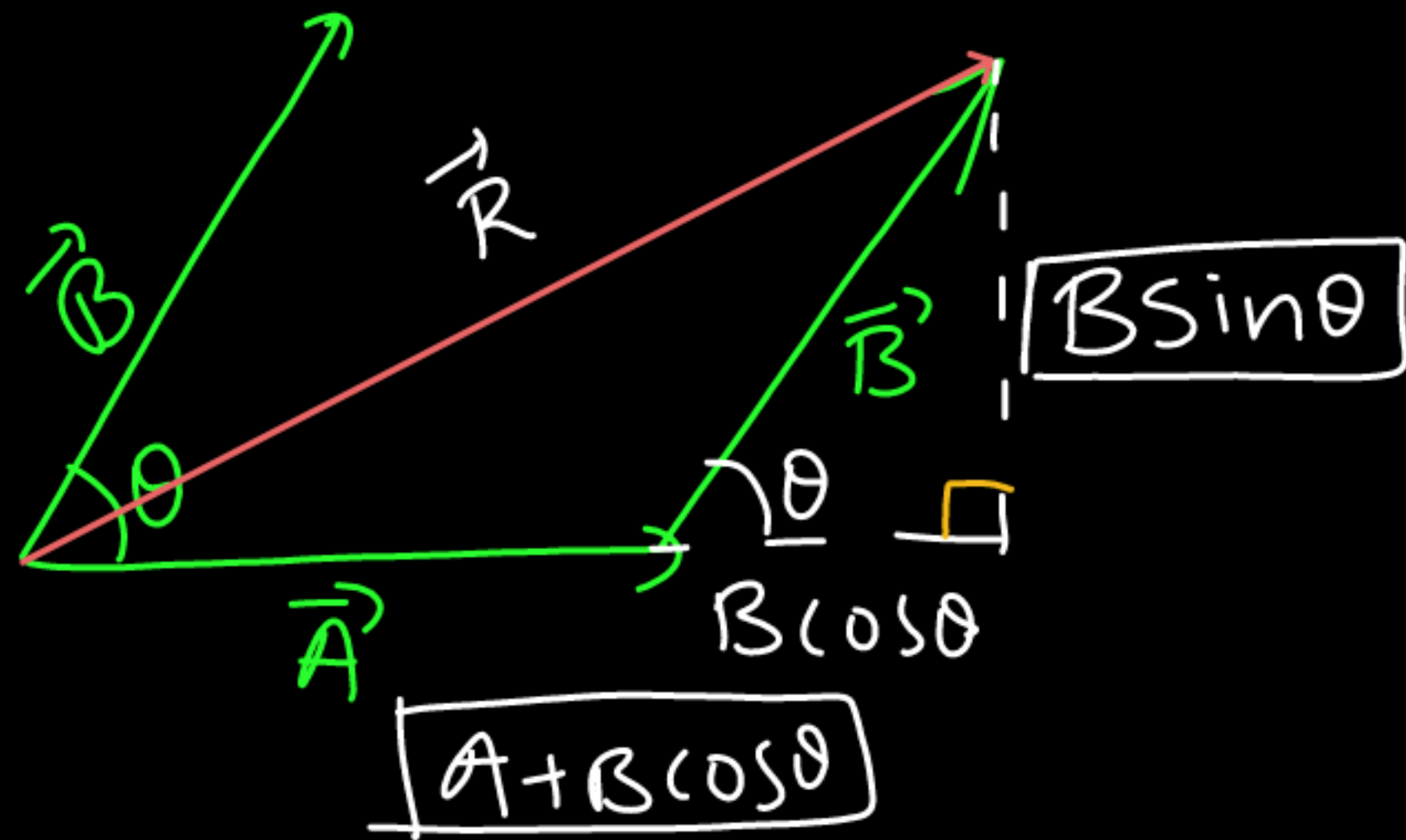
$$|\vec{F}_{02}| = \frac{k q_2 q_0}{r_2^2}$$

$$|\vec{F}_{03}| = \frac{k q_3 q_0}{r_3^2}$$

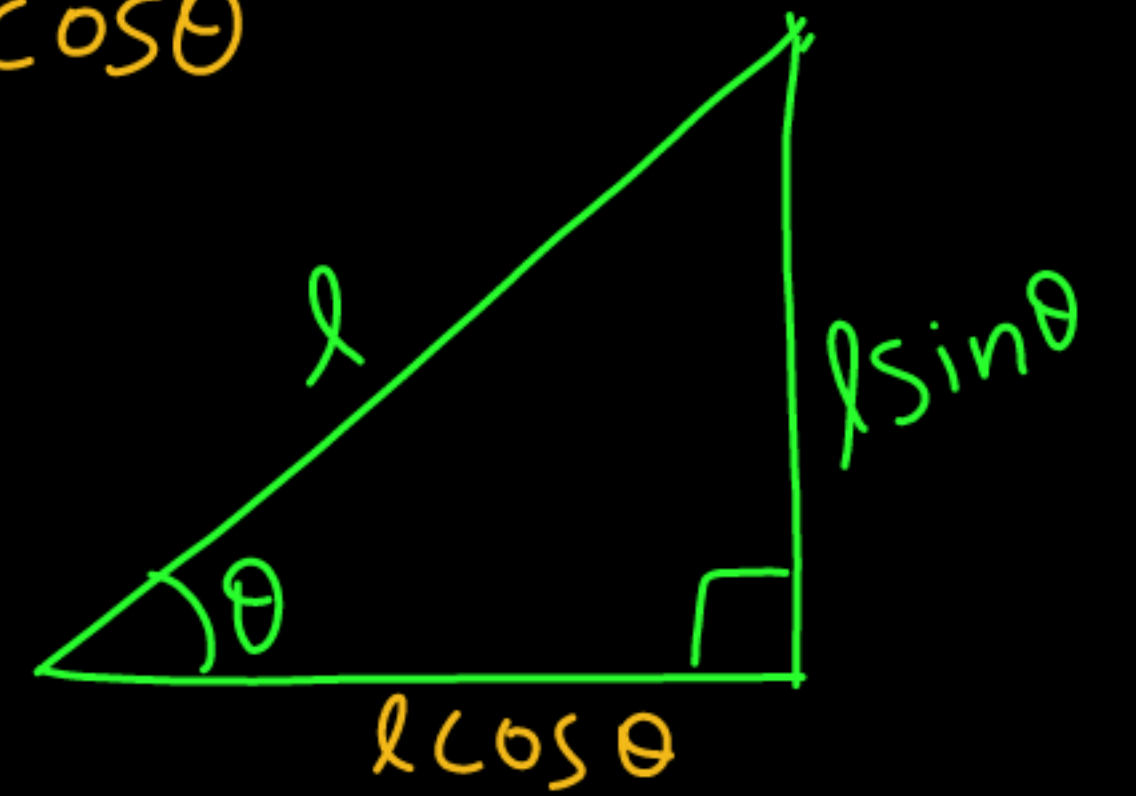
⊗



$$|\vec{R}| = \sqrt{A^2 + B^2 + 2AB\cos\theta}$$



$$R = \sqrt{A^2 + B^2 + 2AB \cos \theta}$$



$$\cos \theta = \frac{b}{l}$$

$$l \cos \theta = b$$

$$\sin \theta = \frac{p}{l}$$

$$l \sin \theta = p$$

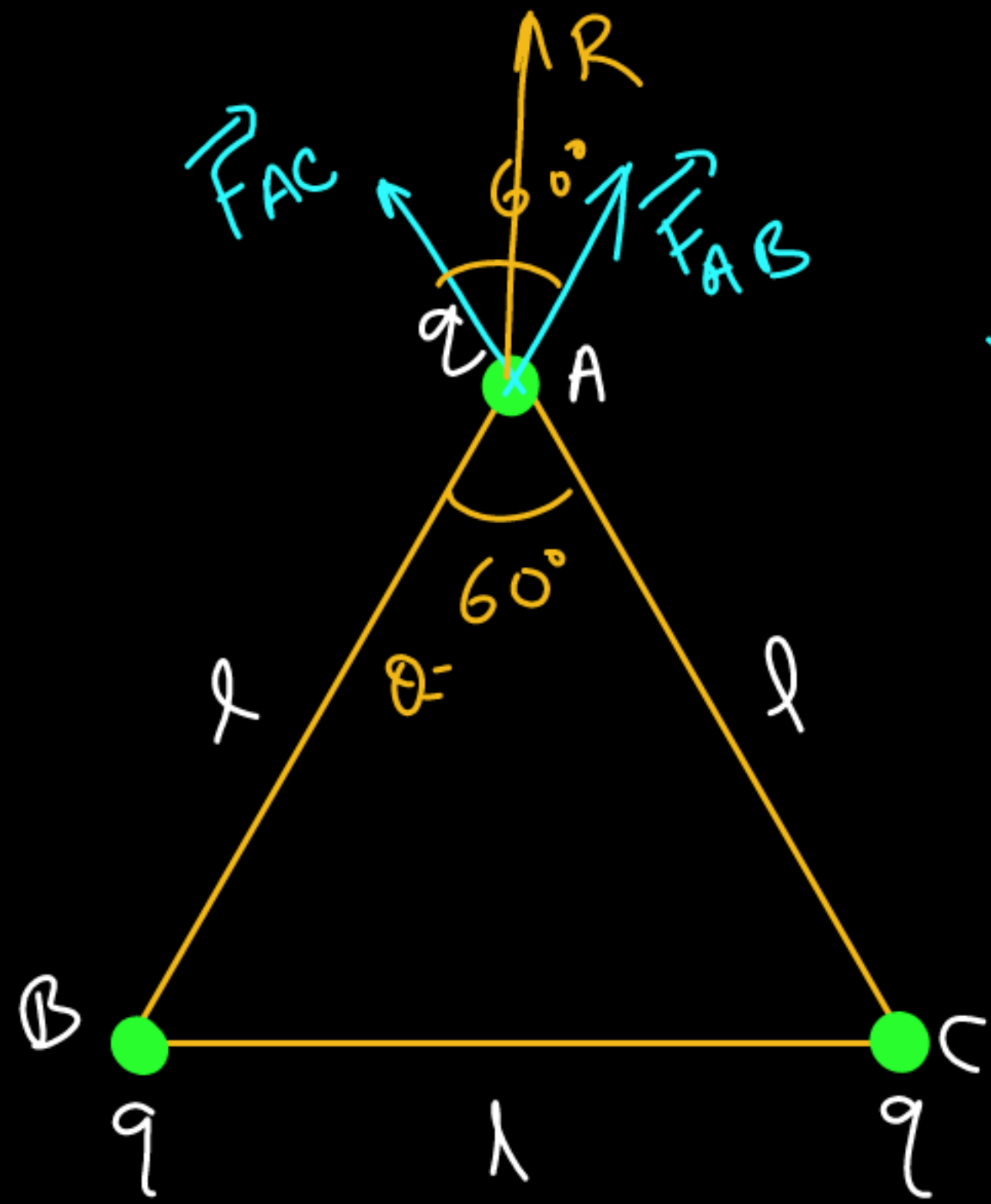
$$R^2 = (A + B \cos \theta)^2 + (B \sin \theta)^2$$

$$R^2 = A^2 + B^2 \cos^2 \theta + 2AB \cos \theta + B^2 \sin^2 \theta$$

$$= A^2 + B^2 (\cos^2 \theta + \sin^2 \theta) + 2AB \cos \theta$$

$$R^2 = A^2 + B^2 + 2AB \cos \theta$$

HCV ①  
16



① Diagram.

② magnitude

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

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

③ Resultant

$$\begin{aligned} R &= \sqrt{F^2 + F^2 + 2FF \cos 60^\circ} \\ &= \sqrt{F^2 + F^2 + F^2} \\ &= \sqrt{3F^2} \\ &= \sqrt{3} F \end{aligned}$$

$$R = \sqrt{3} \frac{kq^2}{l^2}$$

$$R = \sqrt{A^2 + B^2 + 2AB \cos \theta}$$

$$= \sqrt{F^2 + F^2 + 2FF \cos 60^\circ}$$

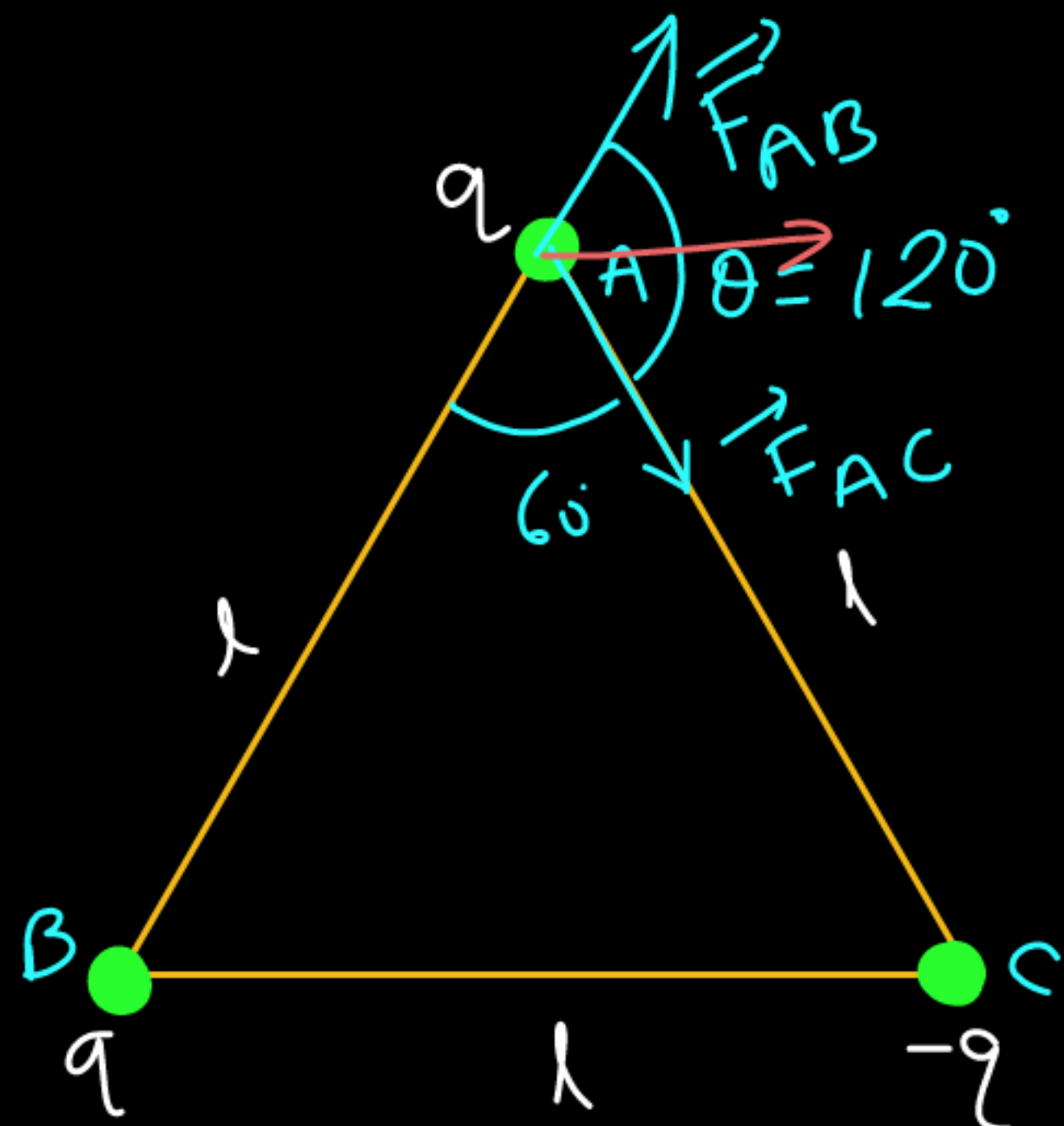


Diagram आरेख

magnitude परिमाण

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

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

$$\cos 120^\circ = -\frac{1}{2}$$

Resultant

$$R = \sqrt{A^2 + B^2 + 2AB \cos \theta}$$

$$= \sqrt{F^2 + F^2 + 2FF \cos 120^\circ}$$

$$= \sqrt{F^2 + F^2 + 2F^2 \left(-\frac{1}{2}\right)}$$

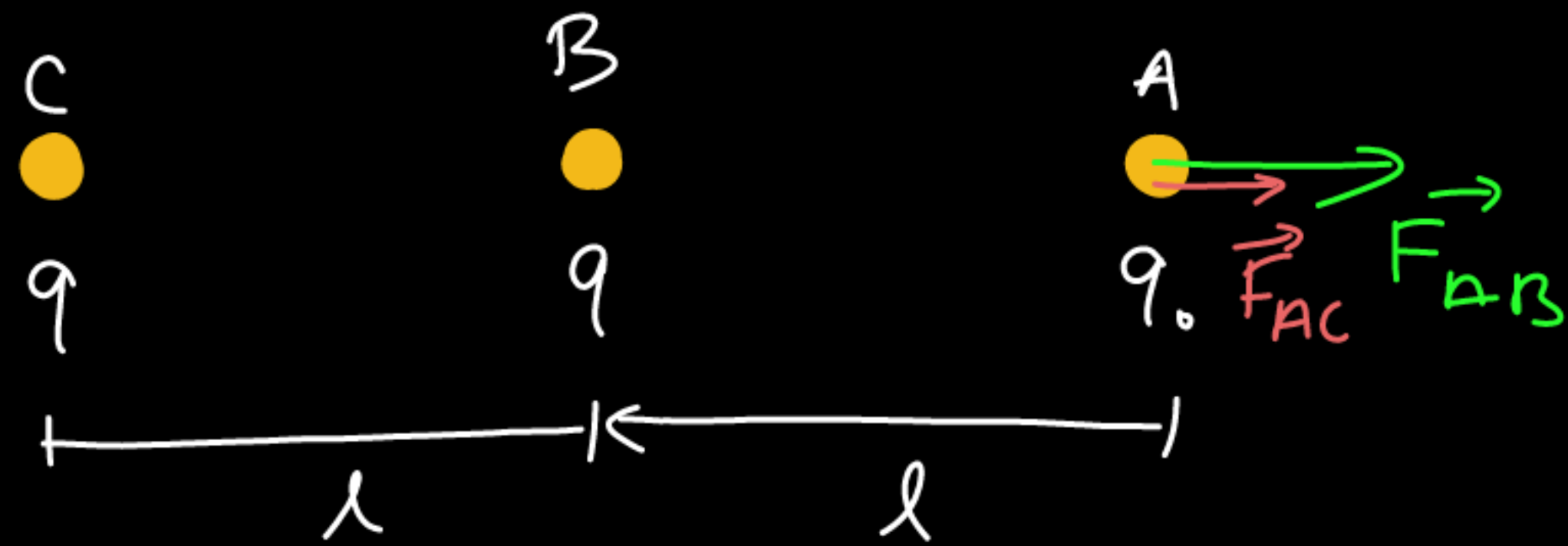


$$R = \sqrt{F^2 + F^2 - F^2}$$

$$= \sqrt{F^2} = F$$

$$R = \frac{kq^2}{l^2} \text{ (A)}$$

Q. Find the net force on Charged particle at A  
 A पर उपस्थित आवेशित कण पर कुल बल ज्ञात करें।



✓✓ Diagram आरेख  
 ✓ magnitude परिमाण

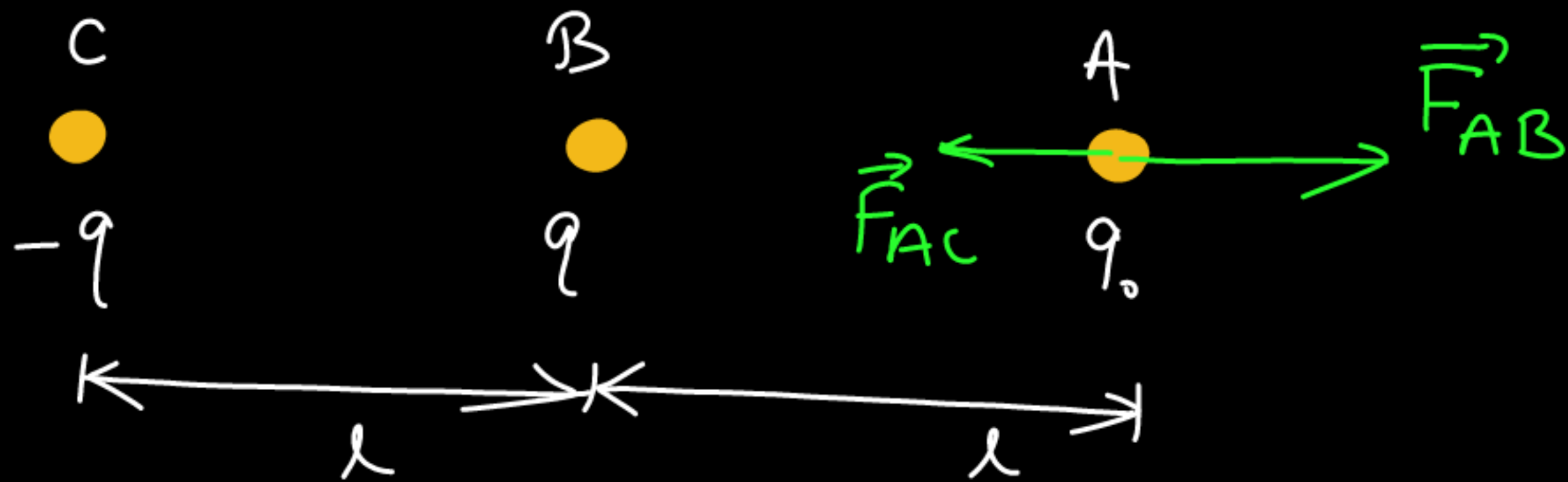
$$|\vec{F}_{AB}| = \frac{Kq \cdot q}{l^2}$$

$$|\vec{F}_{AC}| = \frac{Kq \cdot q}{(2l)^2} = \frac{Kq \cdot q}{4l^2}$$

$$R = \frac{Kq \cdot q}{l^2} + \frac{Kq \cdot q}{4l^2}$$

$$= \frac{Kq \cdot q}{l^2} \left( 1 + \frac{1}{4} \right) = \frac{5}{4} \frac{Kq \cdot q}{l^2} \text{ (A)}$$

Q. Find the net force on  $q_0$ .



$$|\vec{F}_{AB}| = \frac{kq_0q}{l^2}$$

$$|\vec{F}_{AC}| = \frac{kq_0q}{(2l)^2} = \frac{kq_0q}{4l^2}$$

$$R = |\vec{F}_{AB}| - |\vec{F}_{AC}|$$

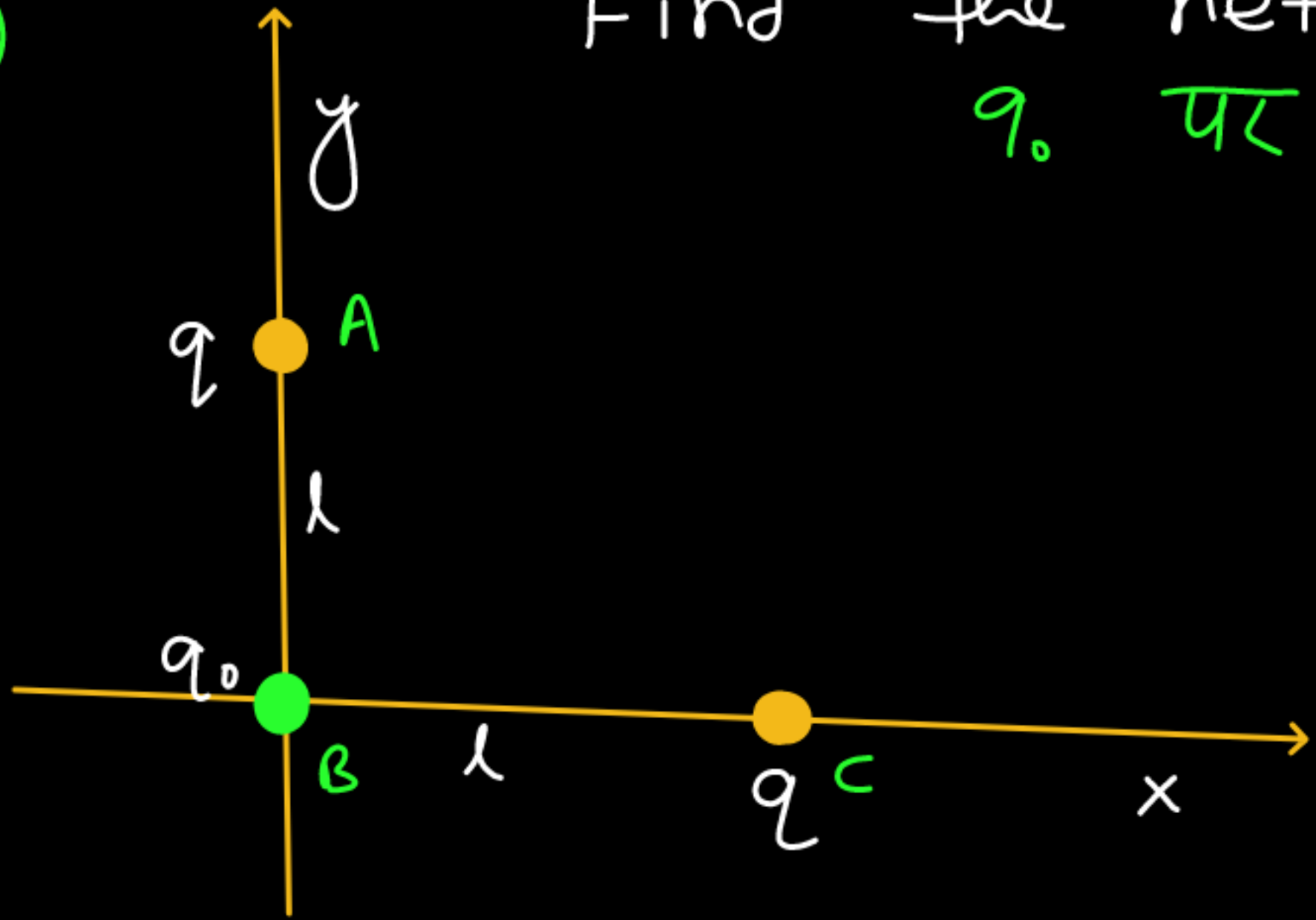
$$= \frac{kq_0q}{l^2} - \frac{kq_0q}{4l^2}$$

$$= \frac{kq_0q}{l^2} \left(1 - \frac{1}{4}\right) = \frac{3}{4} \frac{kq_0q}{l^2} \text{ (A)}$$



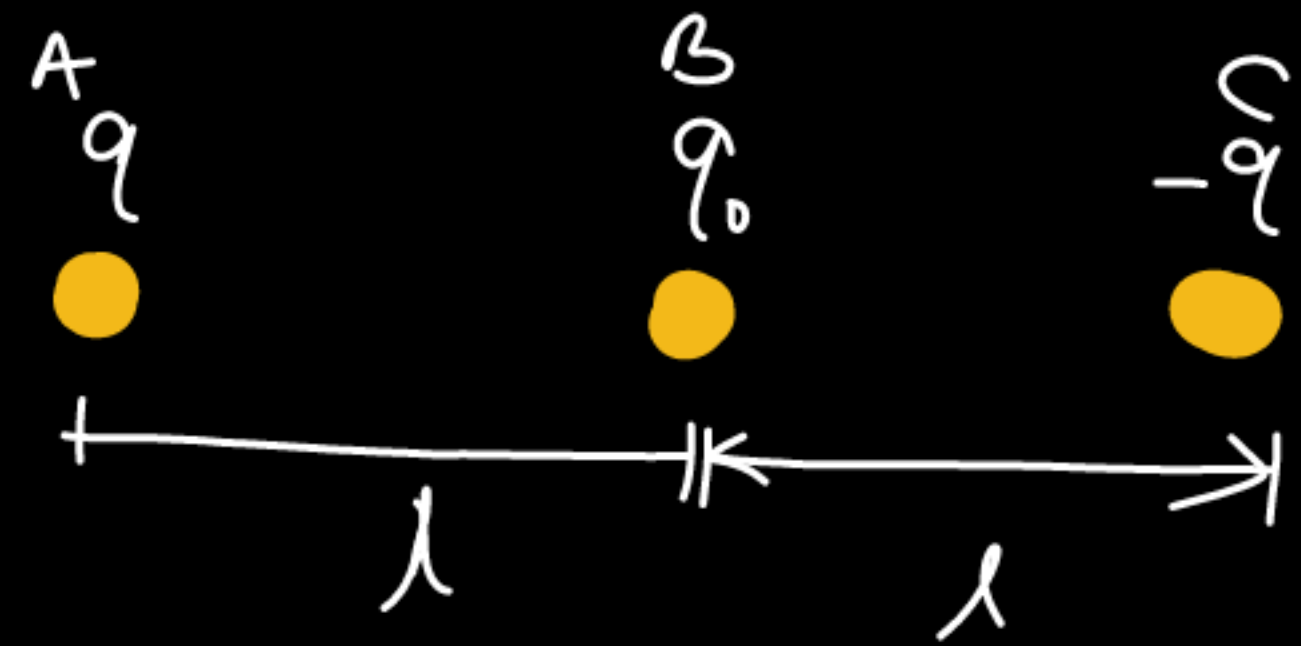
(\*) (Q)

Find the net force on  $q_0$ .  
 $q_0$  पर कुल बल ज्ञात करें।

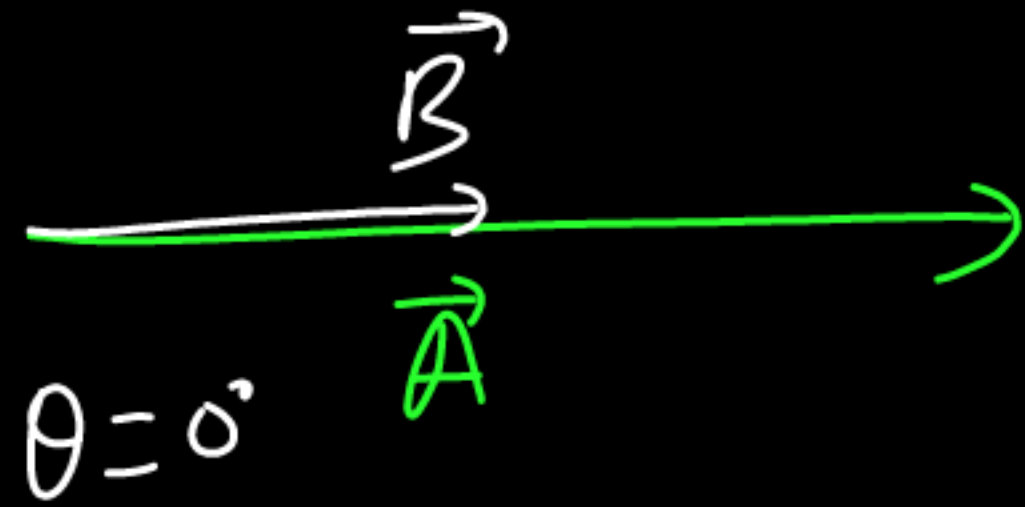


H.W

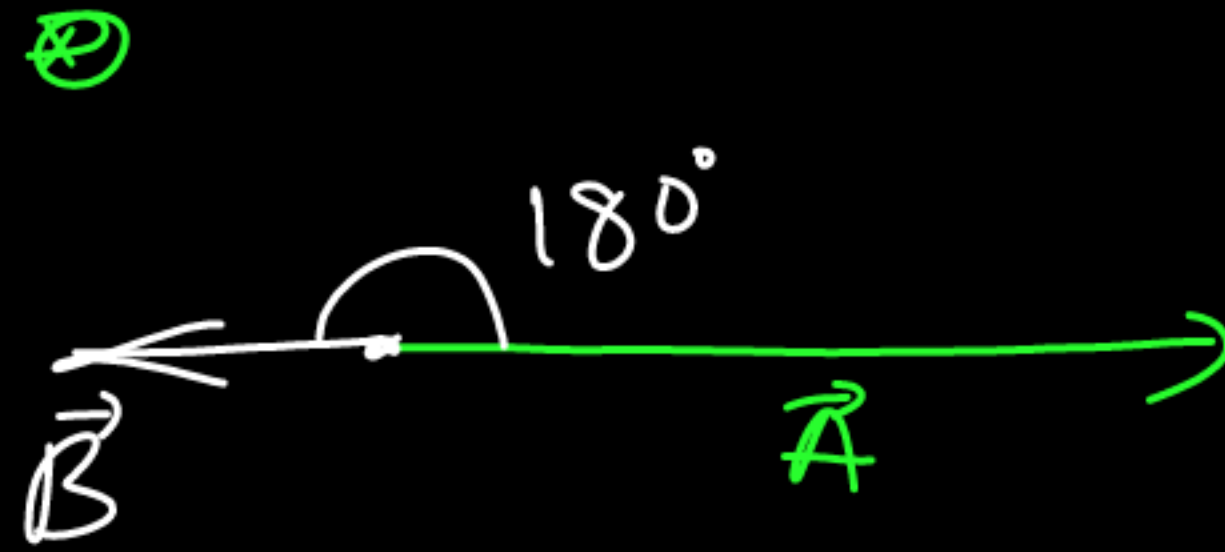
(Q)



Find the net force on  $q_0$ .



$$\begin{aligned}
 R &= \sqrt{A^2 + B^2 + 2AB \cos 0^\circ} \\
 &= \sqrt{A^2 + B^2 + 2AB} \\
 &= \sqrt{(A+B)^2} \\
 &= (A+B)
 \end{aligned}$$



$$\begin{aligned}
 R &= \sqrt{A^2 + B^2 + 2AB \cos 180^\circ} \\
 &= \sqrt{A^2 + B^2 + 2AB(-1)} \\
 &= \sqrt{A^2 + B^2 - 2AB} \\
 &= \sqrt{(A-B)^2} = (A-B)
 \end{aligned}$$