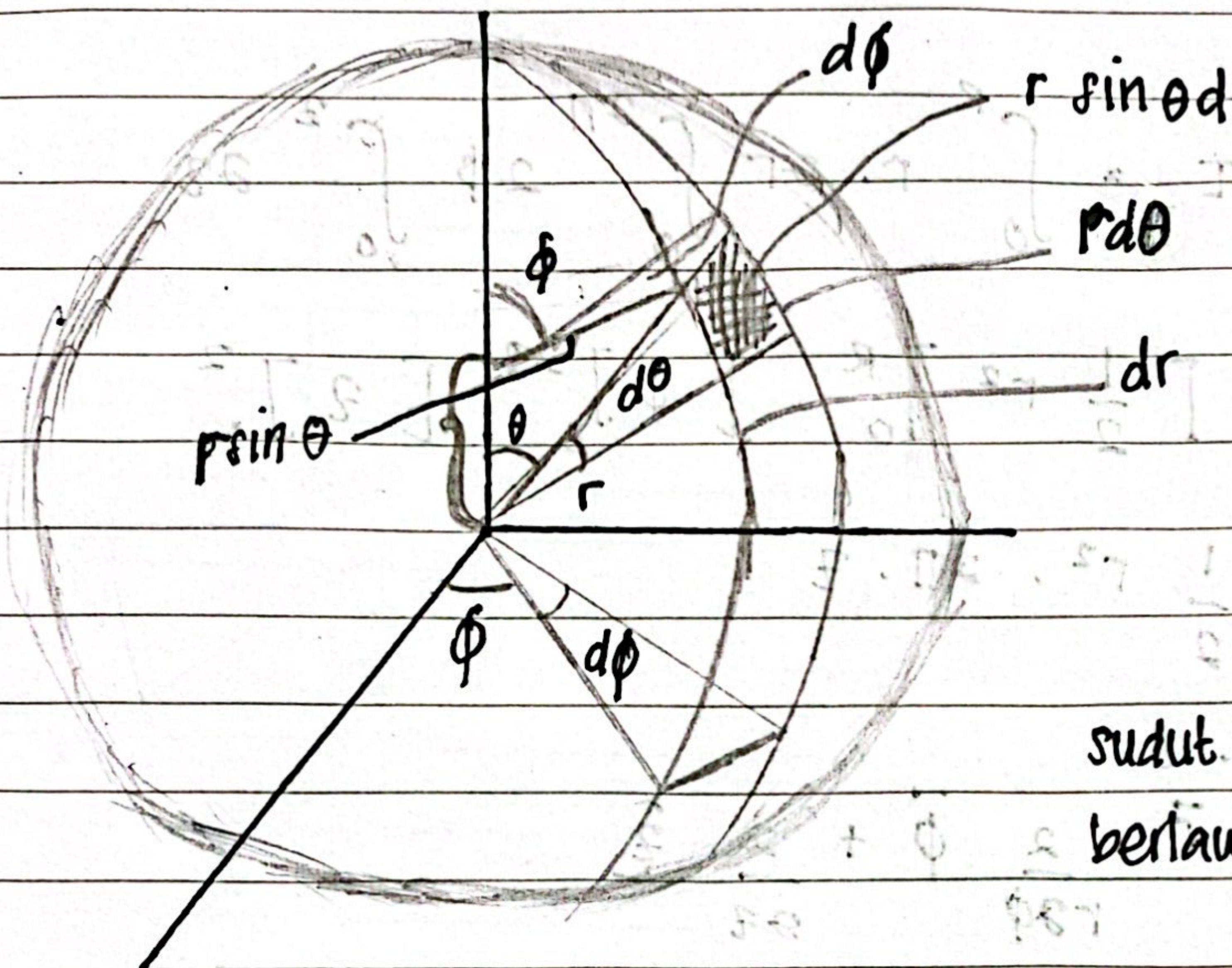
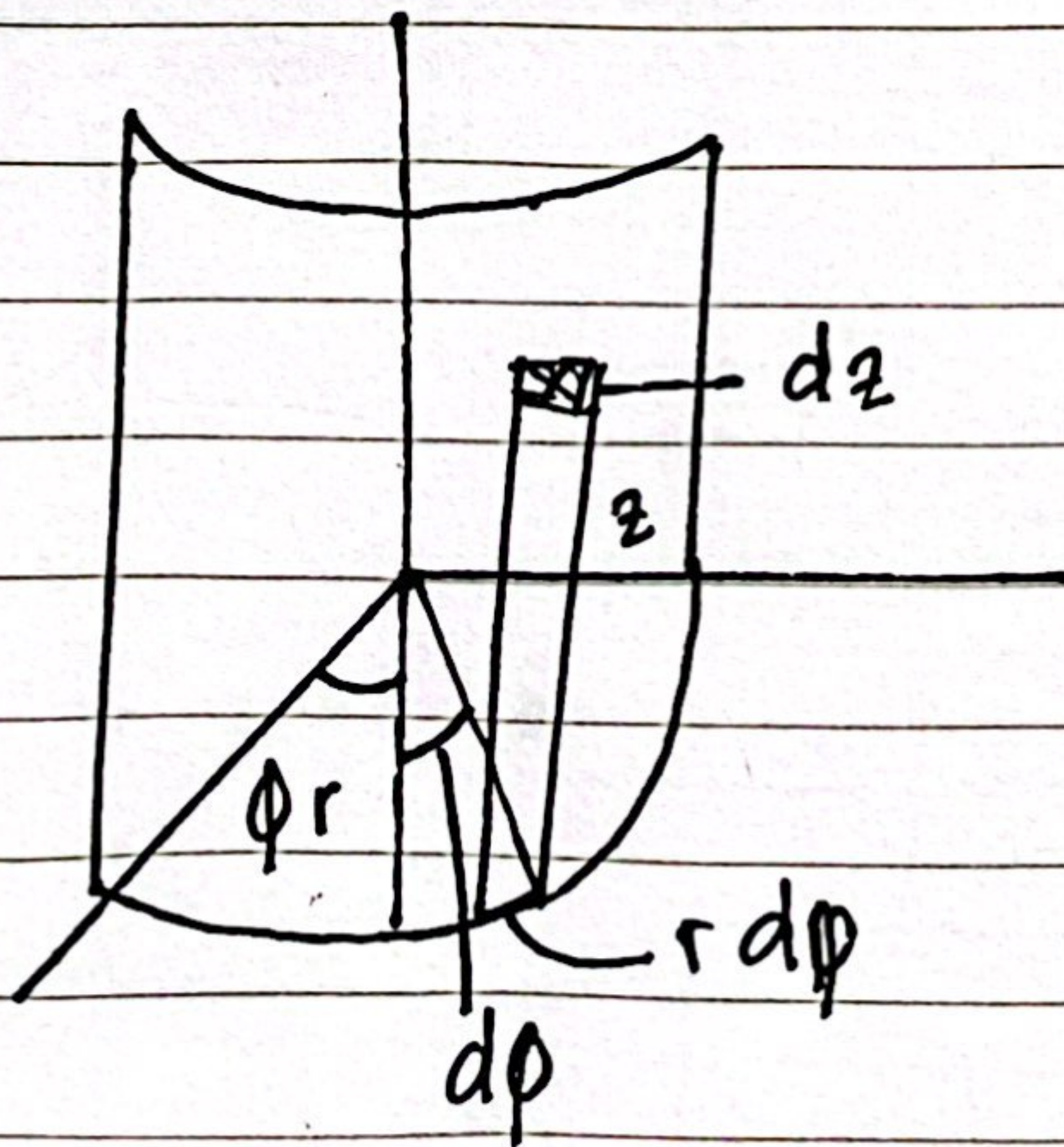


kalisma



sudut berhadapan sin  
berlawanan dgn cos.

$$A = P \times L$$



$$A = r d\phi dz$$

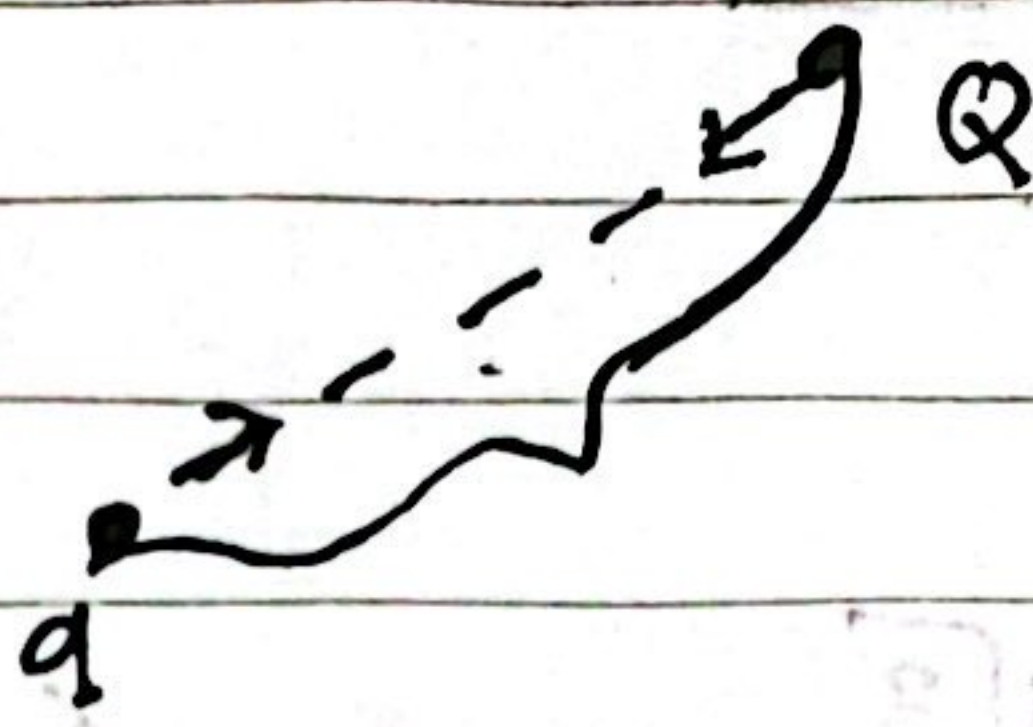
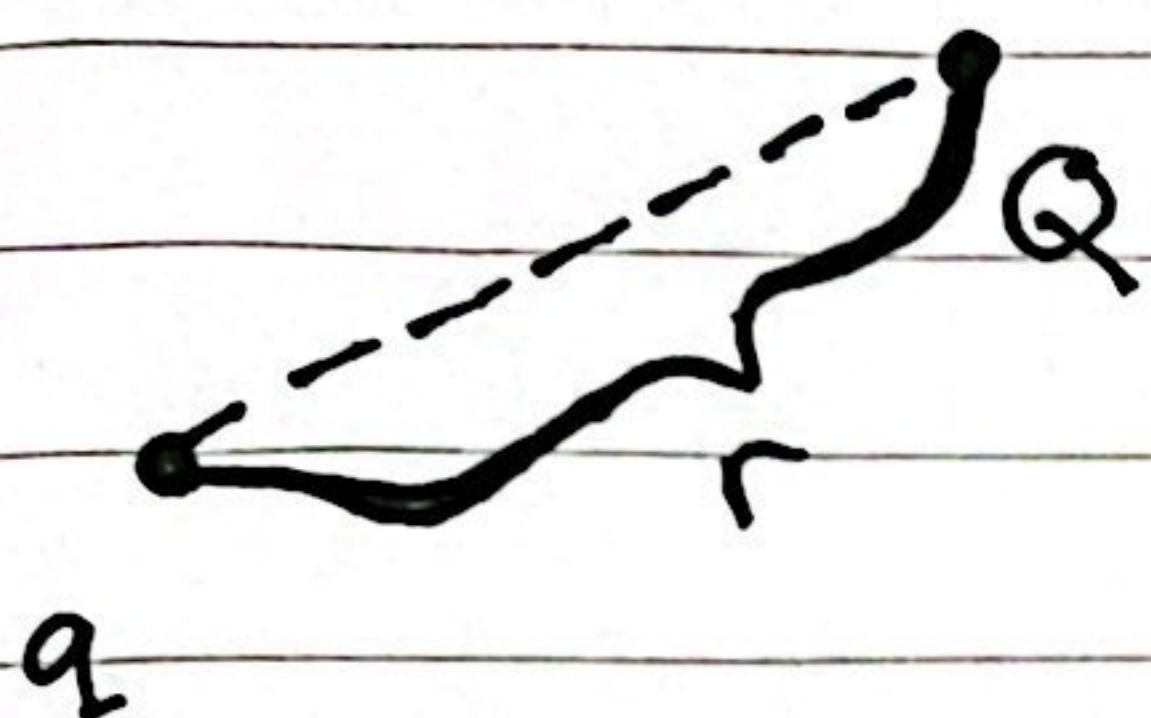
$$V = r d\phi dz dr$$

Listrik statis

ex = petir (melepaskan muatan kebumi)



$$q = \pm Ne$$

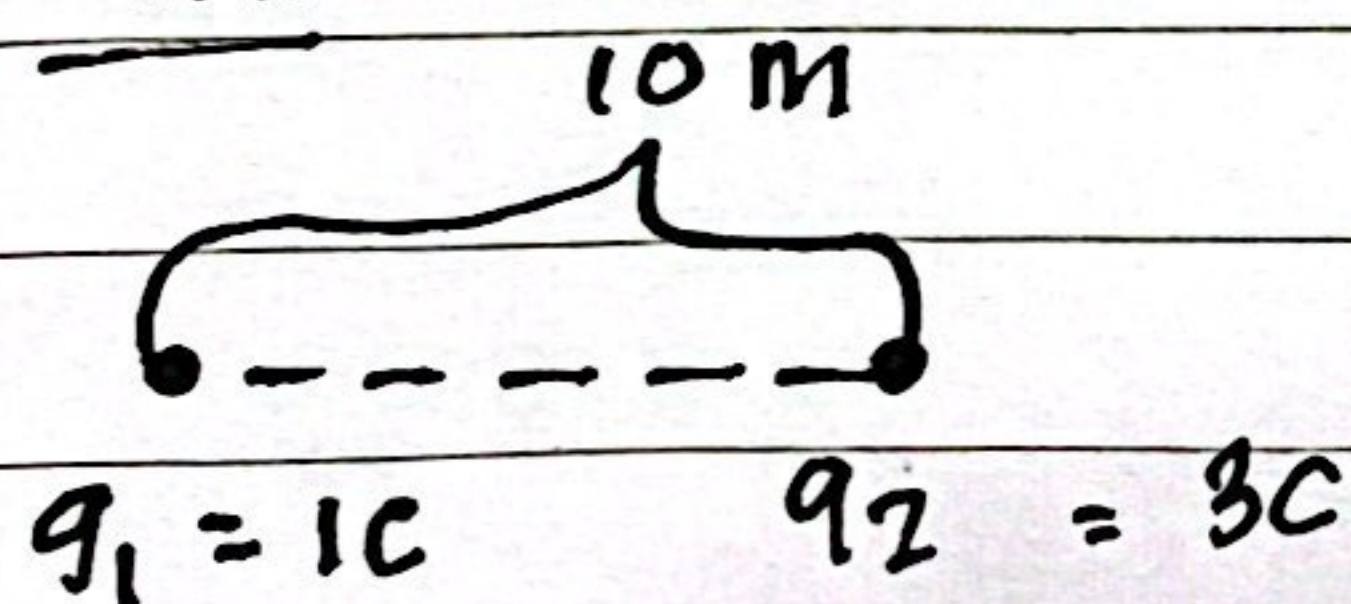


$$F = \frac{1}{4\pi\epsilon_0} \frac{qQ}{r^2}$$

$$F_1 = F_2$$

$$k \frac{qQ}{(r-x)^2} = k \frac{qQ}{x^2}$$

soal



$$q_3 = -2C$$

$$F_1 = F_2$$

$$k \frac{1 \cdot 2}{x^2} = k \frac{2 \cdot 3}{(10-x)^2}$$

$$\frac{1}{x^2} = \frac{3}{(10-x)^2}$$

$$(10-x)^2 = 3x^2$$

$$100 - 20x + x^2 = 3x^2$$

$$100 = 3x^2 + 20x - x^2$$

$$100 = 2x^2 + 20x$$

$$0 = 2x^2 + 20x - 100$$

$$0 = x^2 + 10x - 50$$

$$a = 1 \quad b = 10 \quad c = -50$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-10 \pm \sqrt{10^2 - 4(1)(-50)}}{2(1)}$$



$$= \frac{10 \pm \sqrt{100 + 200}}{2}$$

$$= \frac{10 \pm \sqrt{300}}{2}$$

$$x = \frac{-10 + 10\sqrt{3}}{2}$$

$$x = \frac{-10 + 10\sqrt{3}}{2}$$

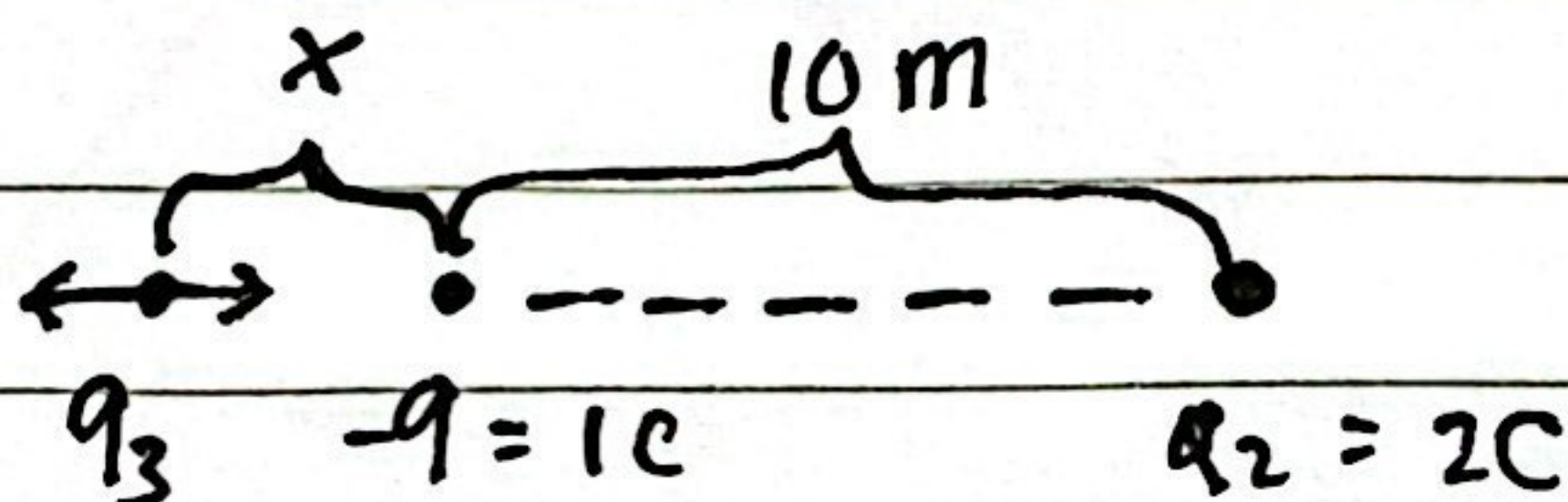
$$x = -5 + 5\sqrt{3}$$

$$= -13,66$$

$$x = -5 - 5\sqrt{3}$$

$$= 3,66$$

Contoh



$$q_3 = 1C$$

$$F_1 = F_2$$

$$k \frac{q_1 q_3}{x^2} = k \frac{q_3 q_2}{(10+x)^2}$$

$$\frac{1}{x^2} = \frac{2}{(10+x)^2}$$

$$2x^2 = (10+x)^2$$

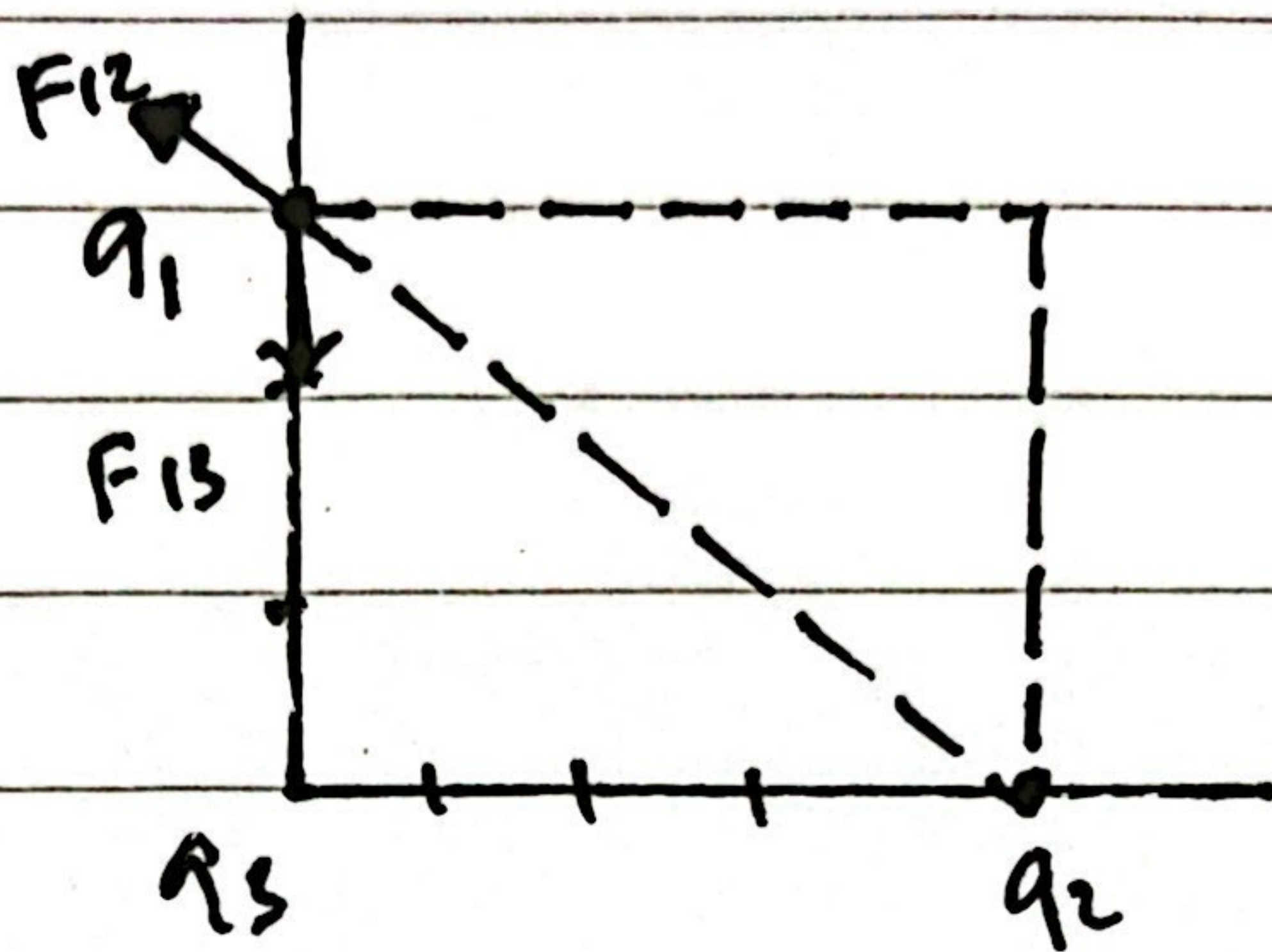
$$2x^2 = 100 + x^2 + 20x$$

$$2x^2 - x^2 - 20x - 100 = 0$$

$$x^2 - 20x - 100 = 0 \rightarrow \text{dilanjut dengan rumus abc}$$



contoh :



$$F_{13} = k \frac{q_1 q_3}{3^2} (-j) \rightarrow \text{Asalnya dr}$$

$$F_{12} = k \frac{q_1 q_2}{5^2} \left[ \frac{-4\hat{i} + 3\hat{j}}{5} \right]$$