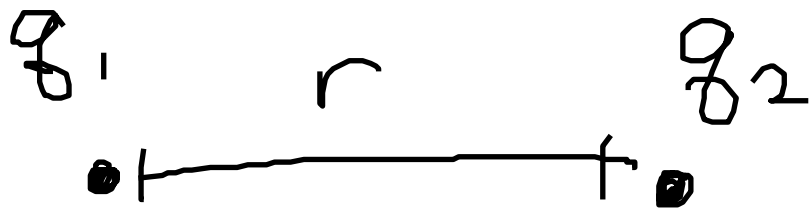


# Coulomb's Law



$$F = k \frac{|q_1 q_2|}{r^2}$$

$$k = 9 \times 10^9 \frac{\text{Nm}^2}{\text{C}^2}$$

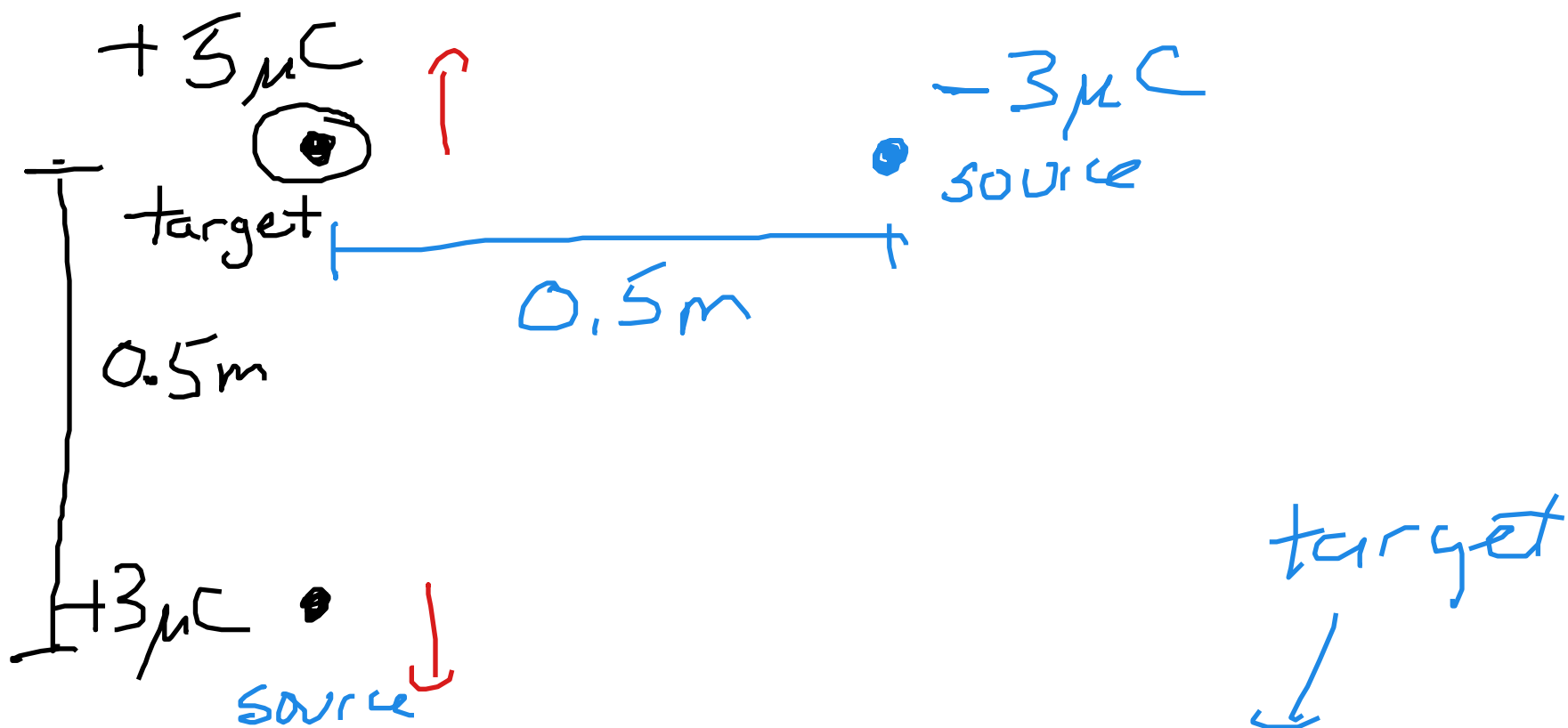
↑ magnitude of force  
on both charges

direction: like repel  
opposite attract

$$m = 10^{-3}$$

$$\mu = 10^{-6}$$

$$n = 10^{-9}$$



What is force on  $+5\mu\text{C}$ ?

$$F = (9 \times 10^9) \frac{(5\mu)(3\mu)}{(0.5)^2}$$

EEE

$$= (9 \times 10^9) \frac{(5 \times 10^{-6})(3 \times 10^{-6})}{(0.5)^2}$$

$$= \frac{9 \times 5 \times 3}{(0.5)^2} \times 10^{9-6-6}$$

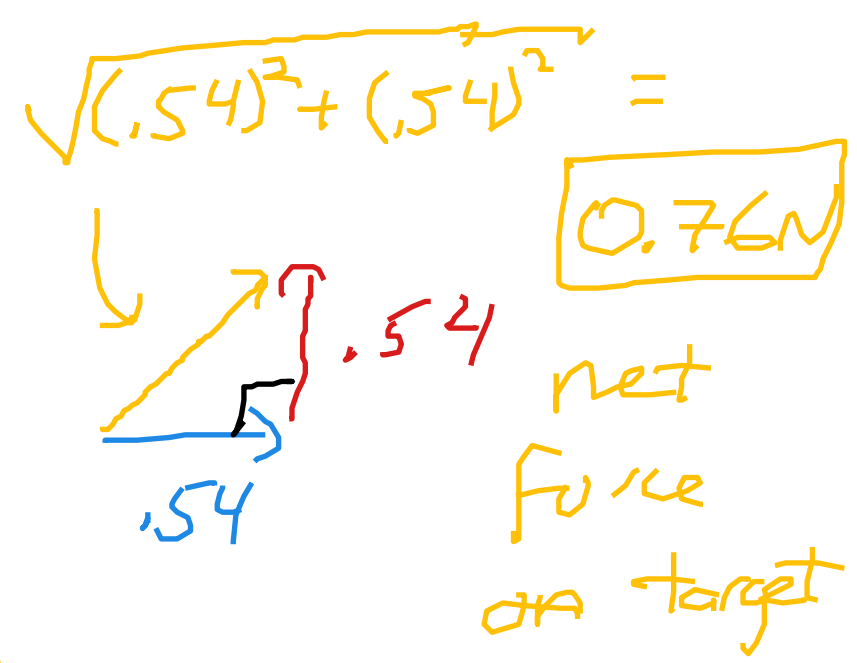
$$= 540 \times 10^{-3} \text{ N}$$

$$= 0.54 \text{ N } \uparrow \text{ (repel)}$$

Sources: pushers

target: pushee

What is the force (on the target)?



$$\vec{F}_{\text{net}} = \vec{F}_1 + \vec{F}_2 + \dots$$

