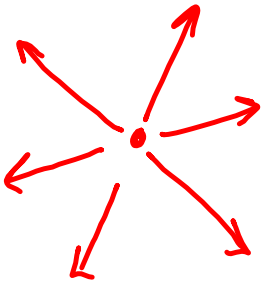
After presenting current w/B,

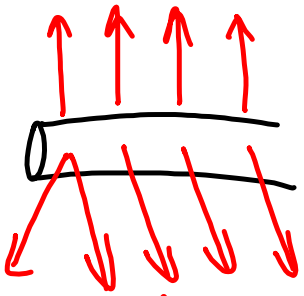
Calculate the $\vec{E}$

2 m from a 6.0 μC charge.

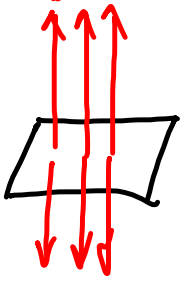
How much energy is required to move a −3.0 μC charge from 2.0m to 5.0m from the 6.0μC charge?



$$F_e \propto \frac{1}{d^2}$$



$$F_e \propto \frac{1}{d^1}$$



$$F_e \propto \frac{1}{d^0}$$

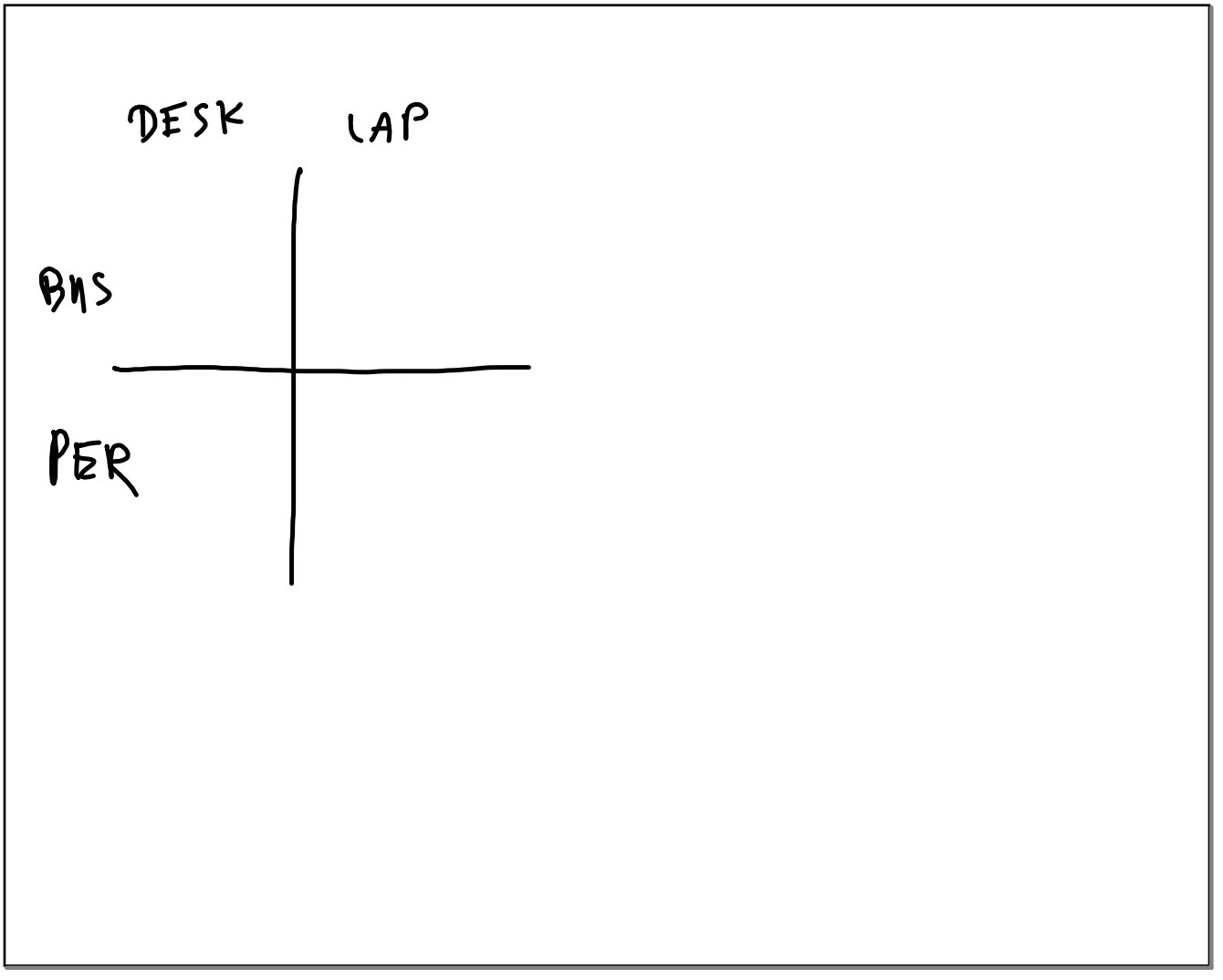
grav. field $\frac{F}{m} = \frac{G m_1}{d^2}$ units N/kg

elec. field $= \frac{k_e q}{d^2} = \frac{F}{q}$ N/C

$PE_g = mgh = \frac{G m_1 m_2 d}{d^2} = \frac{G m_1 m_2}{d}$ J (h)

$PE_e = \frac{k_e q_1 q_2}{d}$ J

November 10, 2014



$\vec{F}_e = \frac{K q_1 q_2}{d^2}$

Elec Force

$\sum \vec{F}_e$

$PE_e = \frac{K q_1 q_2}{d}$ $\sum PE$

Elec Pot Energy

$\vec{E} = \frac{\vec{F}_e}{q_1} = \frac{K q_2}{d^2}$

Electrical Field

$\sum \vec{E}_p$ VECTORS

$V = \frac{PE}{q_1} = \frac{K q_2}{d}$ $\sum V$

POTENTIAL

SCALARS

Bottle tops

W/B #13 pg 40 #18 pg 40 tables 1 & 3

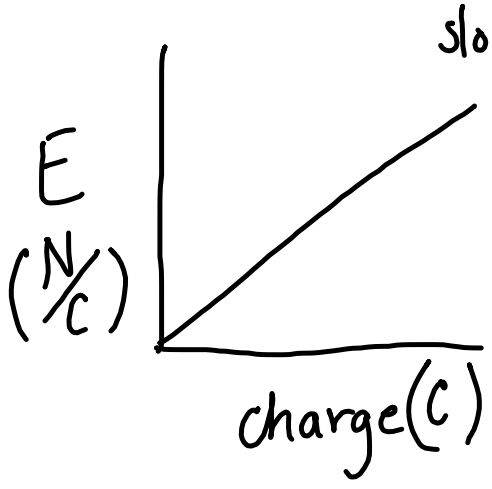
#19 pg 41 #20 pg 41 — every table

#2 pg 41 #3 pg 41 tables 2 & 4

Draw the equipotential lines 3 around this point charge.

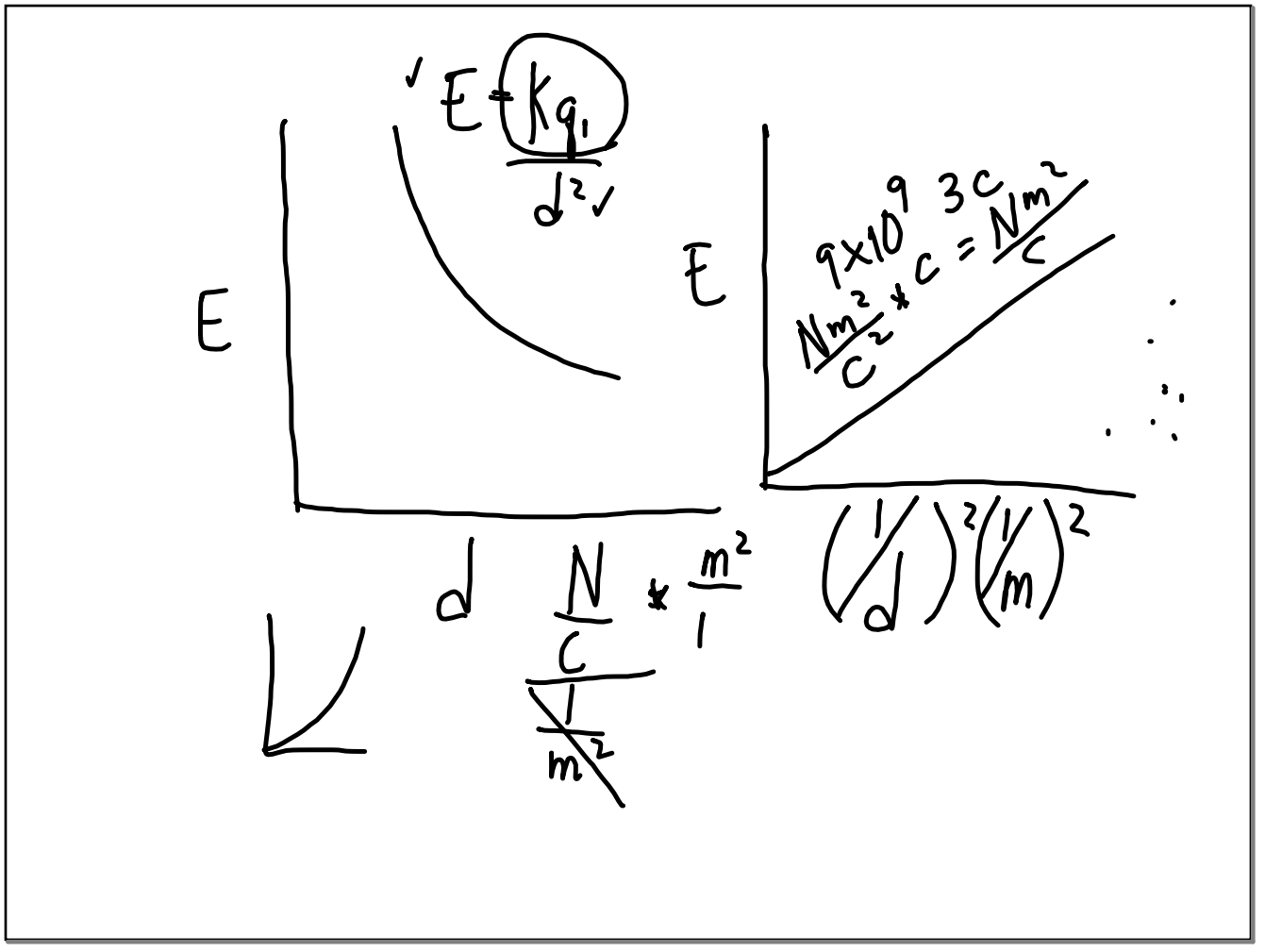
• +3 coulombs

Think about activity pg 23 and this activity ... which one or both would you use in class. which would you use first if you used both? Why did you decide as you did? Be prepared to share in a group discussion and then a class discussion.



$E = \frac{kq}{d^2}$

$\frac{9 \times 10^9}{3^2}$ $\frac{Nm^2}{C^2 m^2}$


E = kq / d²
E
d
E
9x10^9 3C
Nm²/C² * C = Nm²/C
(1/d)²(1/m)²
d N/C * m²/1
1/m²

$E \propto q$

$E \propto \frac{1}{d^2}$

$E \propto \frac{q}{d^2}$

$E = \frac{Kq}{d^2}$

$K = \frac{Ed^2}{q}$ $\quad \frac{\frac{N}{C} \cdot m^2 * \frac{1}{C}}{\frac{C}{1}}$

$q \propto 10^9$ $\quad \frac{Nm^2}{C^2}$