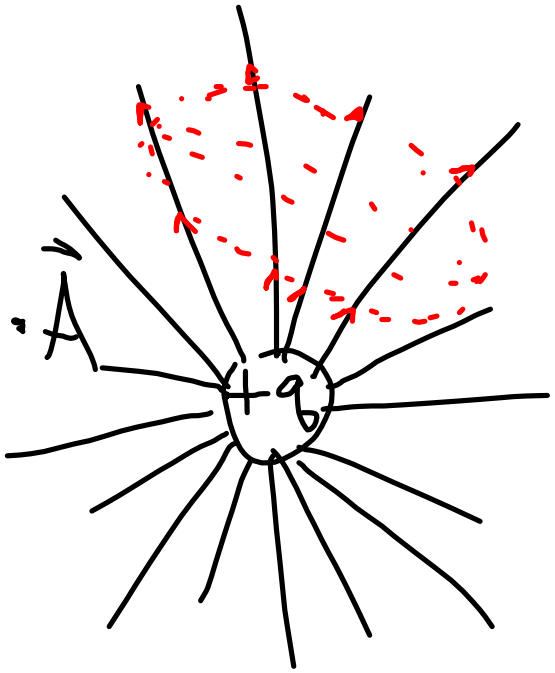
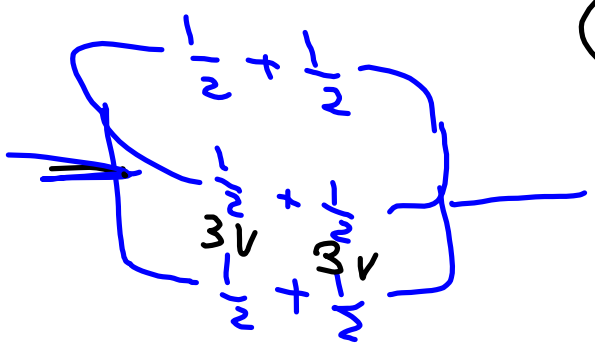
36 $\vec{E} = \frac{\vec{F}}{q}$

38 $\Phi_E = \vec{E} \cdot \vec{A}$

$\Phi_B = \vec{B} \cdot A$



39 Reciprical for Cap in Series
Add when Paralel



40 $Q = VC$

$6\,\mu C = V\ 2\,\mu F$

$3V = V$

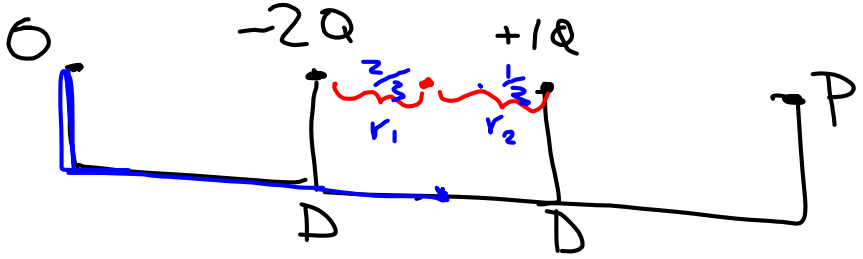
SCALAR	VECTOR
electric Potential Difference	Electric Field
$V = \frac{1}{4\pi\varepsilon_0}\sum\frac{q}{r}$	$V = Ed = F_{\text{for a unit charge}} \cdot d = \frac{1}{4\pi\varepsilon_0}\cdot\frac{q}{r}\cdot d$

(44)

$P = I^2 R$

$= I^2 \frac{\rho l}{\pi(\frac{d}{2})^2}$

$R = \rho\frac{l}{A}$

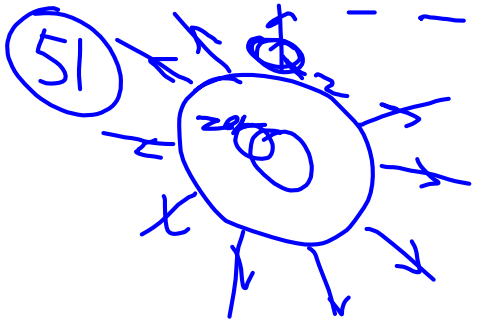


$$\frac{Q}{r_1} = \frac{r_2}{r_2}$$

$$\frac{-2Q}{r_1} = \frac{Q}{r_2} \Rightarrow \frac{r_2}{r_1} = \frac{1}{2}$$

$$E = -\frac{dV}{dr} = -\frac{d}{dr}\left(ar^{-2}\right)$$

$$= -\left(-2ar^{-3}\right)$$



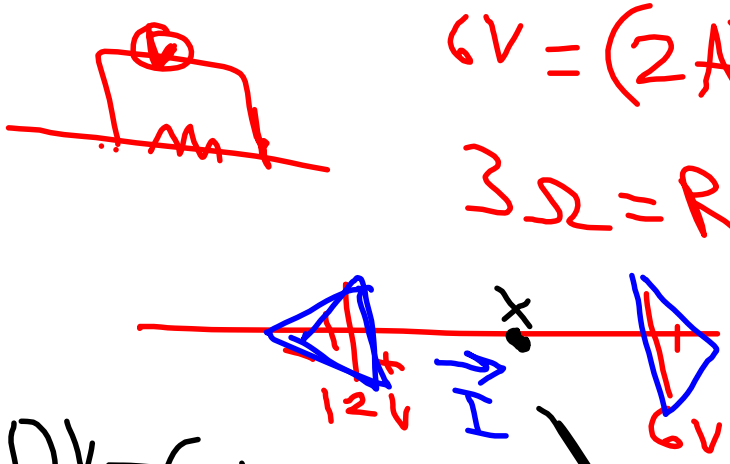
$$E = \frac{F}{q} = \frac{1}{4\pi\varepsilon_0}\frac{q \cdot q_2}{r^2}$$

45

$V = IR$

$6V = (2A) R_{eq}$

$3\Omega = R_{eq}$



$12V - (.3)2A - (.5\Omega)(2A)$

$12 - .6 - 1$

$=$

$-6V - (2A)(.2) - (1\Omega)(2A)$

$=$

47 $P = W$

$= I^2R = 6W$

$6\frac{J}{s}(60sec)$