ELECTROSTATICS CHART

	ELECTRICAL FORCES	ELECTRIC FIELDS	ELECTRIC POTENTIAL	ELECTRIC POTENTIAL ENERGY
UNITS	N $\left(\frac{kg\,m}{s^2}\right)$	$\frac{N}{C}=\frac{V}{m}$ $\left(\frac{kg\,m}{s^2 C}\right)$	$V=\frac{J}{C}$ $\left(\frac{kg\,m^2}{s^2 C}\right)$	J $\left(\frac{kg\,m^2}{s^2}\right)$
DOES CHARGE HAVE TO BE AT POINT OF INTEREST?	YES	NO	NO	YES
DOES THE QUANTITY SUPERPOSE?	YES	YES	YES	NO
SCALAR OR VECTOR	VECTOR	VECTOR	SCALAR	SCALAR
VARIABLE	$\vec{F}$	$\vec{E}$	V	U
FORMULA FOR POINT CHARGE	$\vec{F}=\frac{1}{4\pi\epsilon_0}\frac{q_1 q_2}{r^2}\hat{r}$	$\vec{E}=\frac{1}{4\pi\epsilon_0}\frac{q}{r^2}$	$V=\frac{q}{4\pi\epsilon_0 r}$	$-\int_\infty^r F\cdot dr$ $\left(\frac{q_1 q_2}{4\pi\epsilon_0 r}\right)$
ELEVATION ANALOGY	—	POINTS DOWNHILL STEEPNESS = STRENGTH	ELEVATION	GRAVITATIONAL POTENTIAL ENERGY
VALUE IN CONDUCTOR	0	0	CONSTANT	—

RELATIONSHIPS:

$\vec{F}=q\vec{E}$ $\quad$ $\vec{E}=-\vec{\nabla}V$ $\quad$ $V=-\int_\infty^r E\cdot dr$ $\quad$ $\Delta U=q\Delta V$

others exist.