

# Chapter 21

## Electric Field:

Direction: Direction of force on a positive charge

Magnitude  $E = F/q$

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<http://www.nhn.ou.edu/~walkup/demonstrations/WebAssignments/ElectricField001.htm>

1. A positive test charge of  $5.0 \times 10^{-6} \text{ C}$  is in an electric field that exerts a force of  $2.0 \times 10^{-4} \text{ N}$ . What is the field's magnitude?

2. A negative charge of  $2.0 \times 10^{-8} \text{ C}$  experiences a force of  $0.060 \text{ N}$  to the right in an electric field. What is the magnitude and direction of the field? (p 565)

Potential Difference = work/charge

$$V = w/q$$

A Volt = Joule/Coulomb

$$E = V/d$$

21. How much work is done when 3.0 C is moved through an electrical potential difference of 1.5 Volts?

23. An electron in a television picture tube passes through a potential difference of 18000volts. How much work was done on the electron by the field?