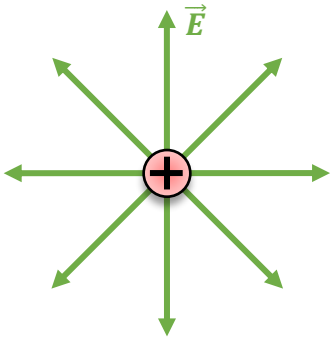
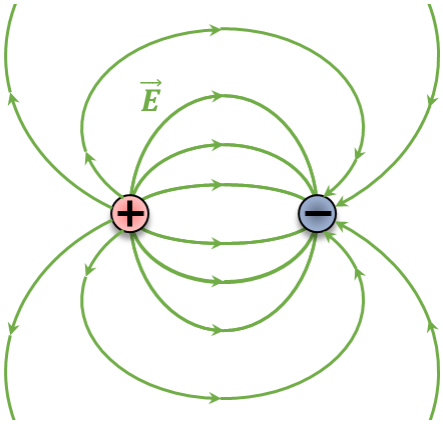
CONCEPT: EQUIPOTENTIAL SURFACES

- EQUIPOTENTIAL SURFACES are surfaces of _____ potential.

POINT CHARGE:



ELECTRIC DIPOLE:



- Relationship between electric field and potential → $\mathbf{E} =$ ____ OR $\boldsymbol{\Delta V} =$ _____

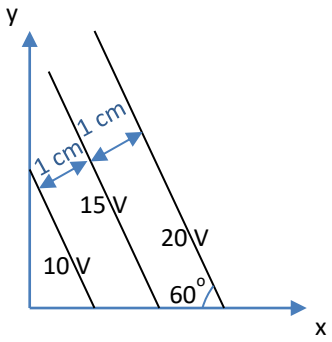
  → $\vec{\mathbf{E}}$ is ALWAYS _____ to equipotentials, points along **[INCREASING | DECREASING]** ΔV

- Remember, $\mathbf{W} = -\mathbf{q}\boldsymbol{\Delta}\mathbf{V}$. Because ΔV along an equipotential is zero, W_{along} = ___

EXAMPLE: What is the distance from a 1 μC point charge to an equipotential surface of 150 V?

EXAMPLE: ELECTRIC FIELD DUE TO EQUIPOTENTIAL SURFACES

What is the magnitude and direction of the electric field due to the equipotential surfaces shown in the following figure?



PRACTICE: DRAWING EQUIPOTENTIAL SURFACES FROM ELECTRIC FIELD LINES

Draw the electric field that corresponds to the equipotential surfaces shown in the following figure. Note that the potential is decreasing in the upward direction.