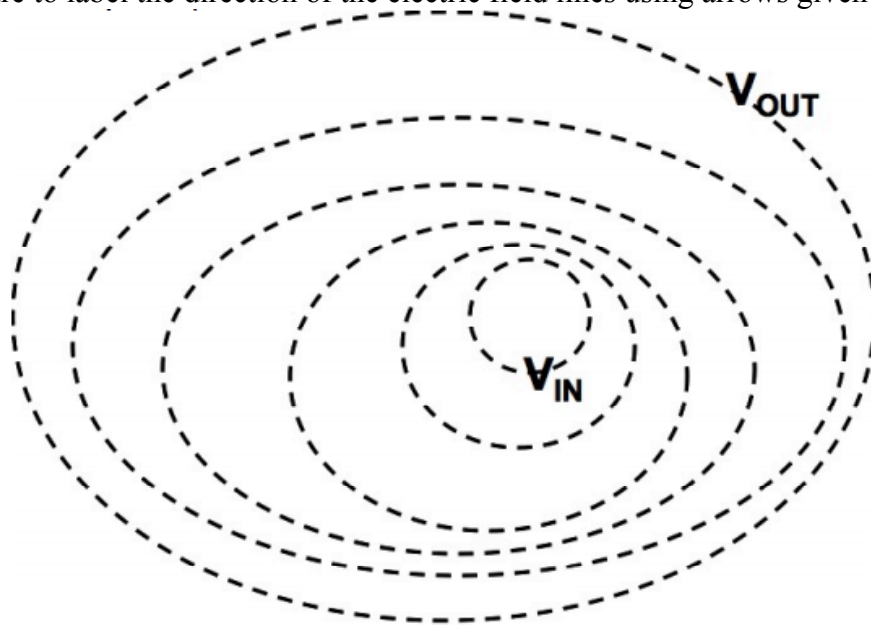
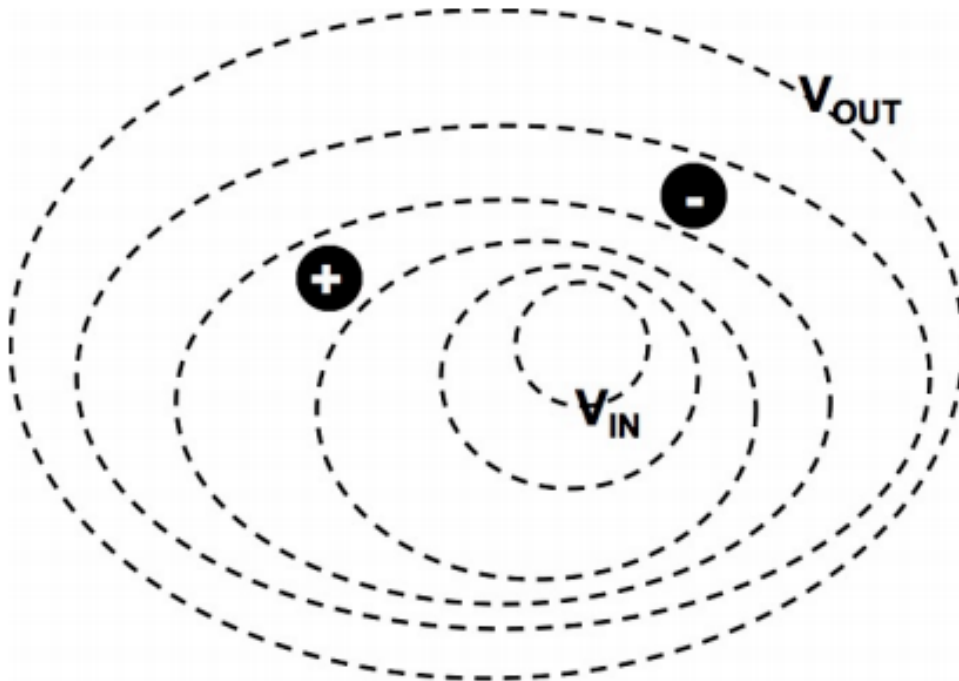


## Lab Worksheet--C. Electric Field and Potential

1. The following picture depicts equipotential lines (dashed, corresponding to constant voltage). Sketch the corresponding electric field lines. (Draw the electric field lines using solid lines.) Be sure to label the direction of the electric field lines using arrows given that  $V_{OUT} < V_{IN}$ .

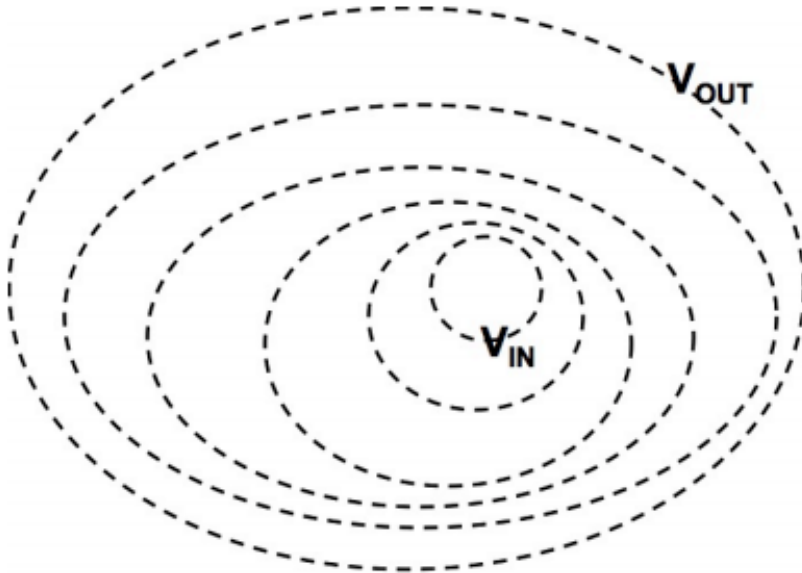


2. For the situation in the diagram, ignore the electric force between the point charges. For each of the two charges (one +, one -) draw an arrow in the direction it would move if placed as shown and released from rest.



### Lab Worksheet--C. Electric Field and Potential

3. Label the two regions that have the strongest electric field and the two regions that have the weakest electric field. Next to the picture, explain your reasoning.



4. Calculate the electric field at the marked point using the derivative approximation. Be sure to find both  $E_x$  and  $E_y$ , and write your final answer in vector notation.

