

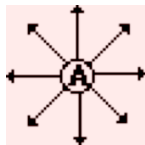
### Electric Field Lines

Read from **Lesson 4** of the **Static Electricity** chapter at **The Physics Classroom**:

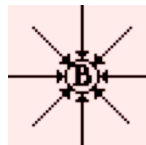
<http://www.physicsclassroom.com/Class/estatics/u8l4c.html>  
<http://www.physicsclassroom.com/Class/estatics/u8l4d.html>

**MOP Connection:** Static Electricity: sublevel 12

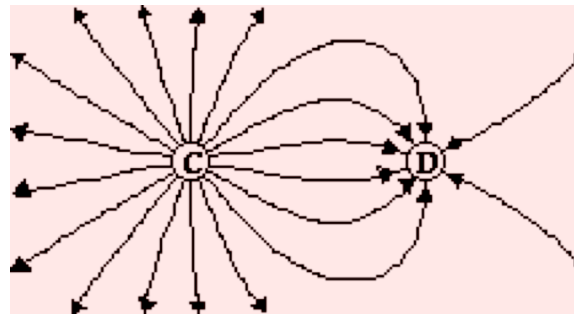
1. Electric field lines begin on \_\_\_\_\_ (+, -) charges or at infinity and terminate on \_\_\_\_\_ (-, +) charges or infinity. The number of lines that emanate from a charge or approach a charge depends upon \_\_\_\_\_. At locations where a line meets the surface of a charge, the lines are drawn in a \_\_\_\_\_ (tangent, radial) direction. The strength of the electric field is \_\_\_\_\_ (smallest, greatest) wherever the lines are closest together.
2. Use your understanding of electric field lines to identify the charges on the objects in the following configurations.



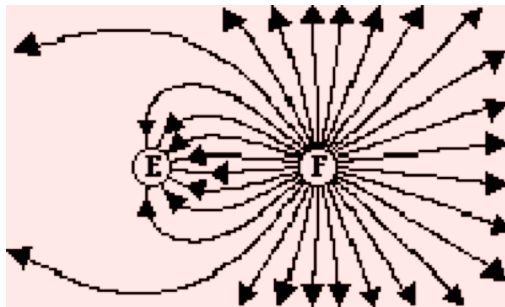
A: + or -



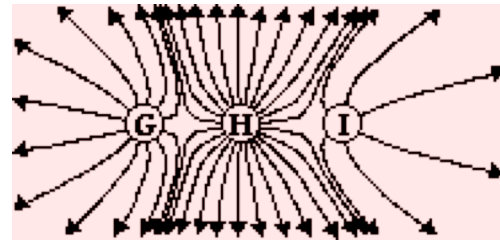
B: + or -



C: + or -      D: + or -

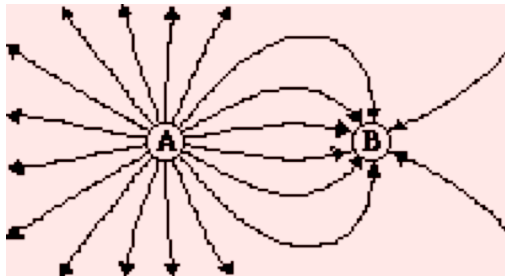


E: + or -      F: + or -

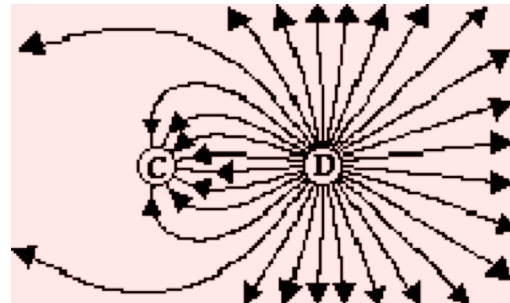


G: + or -    H: + or -    I: + or -

3. Observe the electric field lines below for various configurations. Rank the objects according to which has the greatest magnitude of electric charge, beginning with the smallest charge.

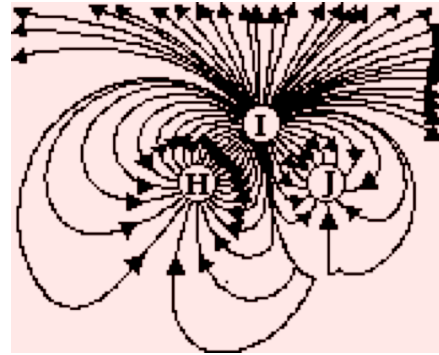
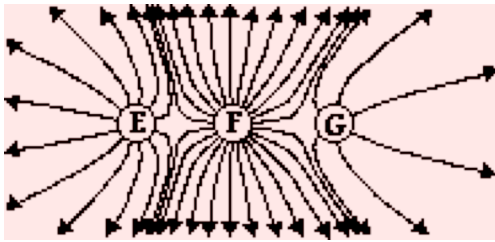


Ranking: \_\_\_\_\_ < \_\_\_\_\_



Ranking: \_\_\_\_\_ < \_\_\_\_\_

Static Electricity



Ranking: \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_      Ranking: \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

4. Draw the electric field lines for the following configurations of charges. Place arrows upon your electric field lines.
