

Example: A uniformly positively charged insulator is brought near a positive point charge. Describe any force that might be experienced by the insulator.

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Example: A dipole is located in a uniform electric field.

- Illustrate the orientation of the dipole that will result in the maximum potential energy.
- Illustrate the orientation of the dipole that will result in the maximum torque.
- Illustrate the orientation of the dipole that will result in the maximum force.

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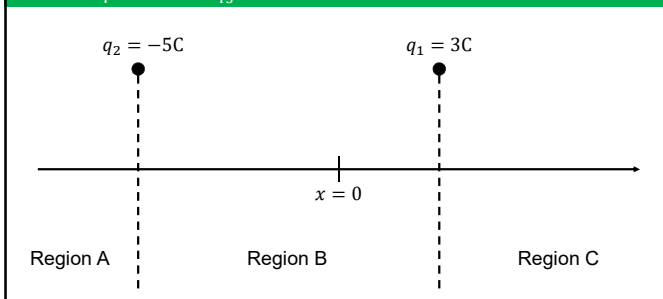
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Example:  $q_3 = 2\text{C}$  is constrained to move along the  $x$ -axis.  $q_1 = 3\text{C}$  at  $(2\text{cm}, 2\text{cm})$  and  $q_2 = -5\text{C}$  at  $(-4\text{cm}, 2\text{cm})$  are held fixed. In which region, is there an equilibrium for  $q_3$ ?




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Example: A pair of charges have an energy  $U_0$ . The distance between the charges is doubled. What is the energy of the modified arrangement?

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Example: A charge experiences a force  $F_0$  due to another nearby charge. The charge is moved so that it now experiences a force  $2F_0$  due to the nearby charge. What must have happened when the charge was moved?

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