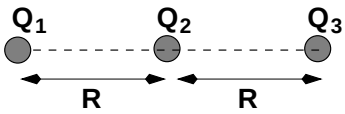
Due date: Fri 03 Sep 2004 08:00:00 AM MDT
2 point(s)
Three charges along a line



Three charges are arranged on a line as shown above.

Choices: **True**, **False**.

A. If Q_1 is negative, Q_2 is negative and Q_3 is positive, then Q_2 MUST feel a net force to the right.
B. If Q_1 is positive, Q_2 is negative and Q_3 is positive, then Q_2 MUST feel a net force to the right.
C. If Q_1 is positive, Q_2 is negative and Q_3 is positive, then Q_2 MIGHT feel a net force to the right.
D. If Q_1 is positive, Q_2 is negative and Q_3 is negative, then Q_2 MUST feel a net force to the right.

Tries 0/5

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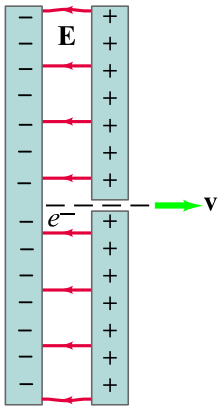
2 point(s)
Physics of TV sets
An electron (mass m = 9.11E-31 kg) is accelerated in the uniform field **E** (E = 1.36E+4 N/C) between two parallel charged plates. The separation of the plates is 1.01 cm. The electron is accelerated from rest near the negative plate and passes through a tiny hole in the positive plate, as seen in the figure below. With what speed does it leave the hole?



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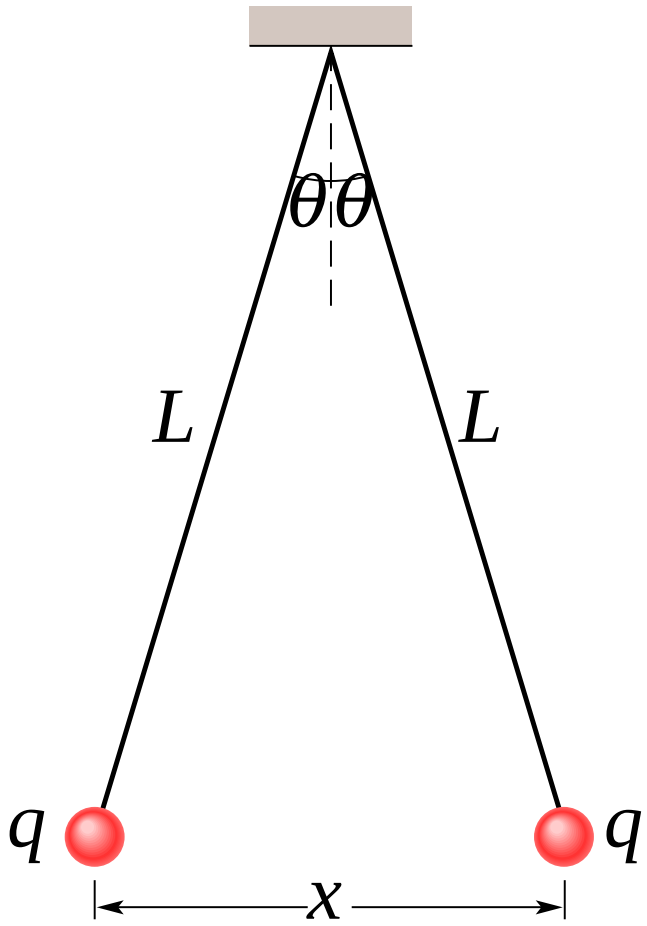
2 point(s)
electric repulsion and force diagrams



(c21p66) In the figure, two conducting balls of identical mass m = 10 *g* and identical charge q hang from nonconducting threads of length L = 100 *cm*. If x = 5.8 *cm*, what is q? Since x is much smaller than L approximate $\sin(\theta)$ by θ.

Tries 0/5

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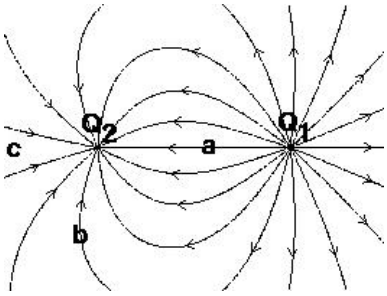
2 point(s)
Electric field line concepts
Select True or False for the follwing statements about electric field lines.

Choices: **True**, **False**.

A. E-field lines may cross.
B. A positive point charge released from rest will initially move along an E-field line.
C. E-field lines point inward toward negative charges.
D. E-field lines do not begin or end in a charge-free region except at infinity.
E. E-field lines point outward from positive charges.
F. Where the E-field lines are dense the E-field must be weak.
G. E-field lines make circles around positive charges.

Tries 0/5

2 point(s)
More E field line concepts



The figure shows the E-field in the plane of two point charges.

Choices: **True**, **False**.

A. A − charge at a would accelerate to the left.
B. The size of Q_1 is larger than that of Q_2.
C. Q_1 is positive.
D. The magnitude of E is the same at a and b.
E. Q_1 and Q_2 have the same sign.
F. A + charge at c would accelerate to the right.

Tries 0/5

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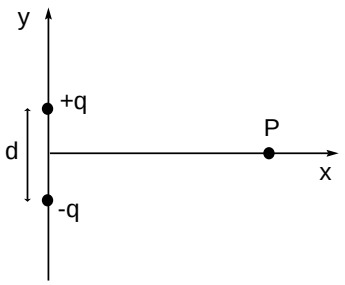
2 point(s)
Superposition

Two charges, +q and -q, are located in the x-y plane at points (0,+d/2) and (0,-d/2), respectively. Calculate the magnitude of the electric field at point P with the superposition principle.



Data: q= 34.0 nC, d= 4.80 mm and P at x= 96.0 mm.

Tries 0/5