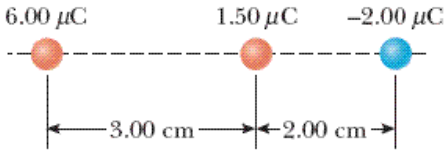
1. Question Details SerCP8 15.P.002. [1521790]

A charged particle *A* exerts a force of 2.46 μN to the right on charged particle *B* when the particles are 12.9 mm apart. Particle *B* moves straight away from *A* to make the distance between them 16.5 mm. What vector force does particle B then exert on A?

[ ] μN to the left

2. Question Details SerCP8 15.P.010. [882108]

Calculate the magnitude and direction of the Coulomb force on each of the three charges shown in the figure below.



6.00 μC charge

Magnitude [ ] N

Direction ---Select---

1.50 μC charge

Magnitude [ ] N

Direction ---Select---

-2.00 μC charge

Magnitude [ ] N

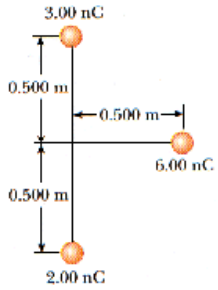
Direction ---Select---

3. Question Details SerCP8 15.P.012. [971362]

Three charges are arranged as shown in the figure below. Find the magnitude and direction of the electrostatic force on the 6.00 nC charge.

Magnitude [ ] N

Direction [ ]° (counterclockwise from +*x*-axis is positive)



4. Question Details SerCP8 15.P.014.ssm. [916844]

A charge of -3.95 nC and a charge of -6.45 nC are separated by a distance of 70.0 cm. Find the position at which a third charge of +7.60 nC can be placed so that the net electrostatic force on it is zero.

[ ] cm from the -3.95 nC charge

[ ] cm from the -6.45 nC charge

5. Question Details SerCP8 15.P.020.soln. [1520441]

An electron is accelerated by a constant electric field of magnitude 315 N/C.

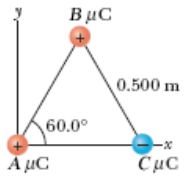
(a) Find the acceleration of the electron.

[ ] m/s^2

(b) Use the equations of motion with constant acceleration to find the electron's speed after 1.25×10^{-8} s, assuming it starts from rest.

[ ] m/s

6. Question Details SerCP8 15.P.024. [2443963]



(a) Three point charges, A = 2.30 μC, B = 7.30 μC, and C = -4.60 μC, are located at the corners of an equilateral triangle as in the figure above. Find the magnitude and direction of the electric field at the position of the 2.30 μC charge.

magnitude [ ] N/C

direction [ ]° (counterclockwise from the +x-axis)

(b) How would the electric field at that point be affected if the charge there were doubled?

- The magnitude of the field would be halved.
- The field would be unchanged.
- The magnitude of the field would double.
- The magnitude of the field would quadruple.

(c) Would the magnitude of the electric force be affected?

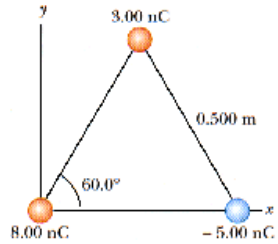
- Yes
- No

7. Question Details SerCP8 15.P.028. [882150]

Three charges are at the corners of an equilateral triangle, as shown in the figure below. Calculate the electric field at a point midway between the two charges on the *x*-axis.

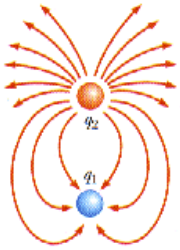
Magnitude ☐ N/C

Direction ☐° below the *x*-axis



8. Question Details SerCP8 15.P.030. [882136]

The figure below shows the electric field lines for two point charges separated by a small distance.



(a) Determine the ratio q_1/q_2.

☐

(b) What are the signs of q_1 and q_2?

- ☐ q_1 is positive.
- ☐ q_1 is negative.
- ☐ q_2 is positive.
- ☐ q_2 is negative.

9. Question Details SerCP8 15.P.048.ssm. [916776]

A very large nonconducting plate lying in the *xy*-plane carries a charge per unit area of 9σ. A second such plate located at $z = 3.00$ cm and oriented parallel to the *xy*-plane carries a charge per unit area of -7σ. Find the electric field for the following.

(a) $z < 0$

☐ σ/ε_0

(b) $0 < z < 3.00$ cm

☐ σ/ε_0

(c) $z > 3.00$ cm

☐ σ/ε_0