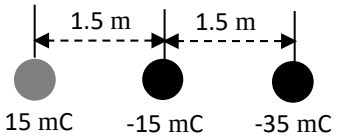
Extra Practice Problems for Chapter 13

($k = 8.99\times10^9 \frac{N\cdot m^2}{C^2}$)

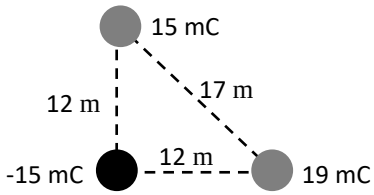
1. A particle with a charge of 35.0 μC is placed near a charge of -14.0 μC. If the electrostatic force is 222 N. What is the distance between the charges? Is the force attractive or repulsive?

2. A 63.1 mC charge (m = 6.11 kg) is orbiting a -16.1 mC charge at a speed of 1,910 m/s. What is the radius of the orbit?

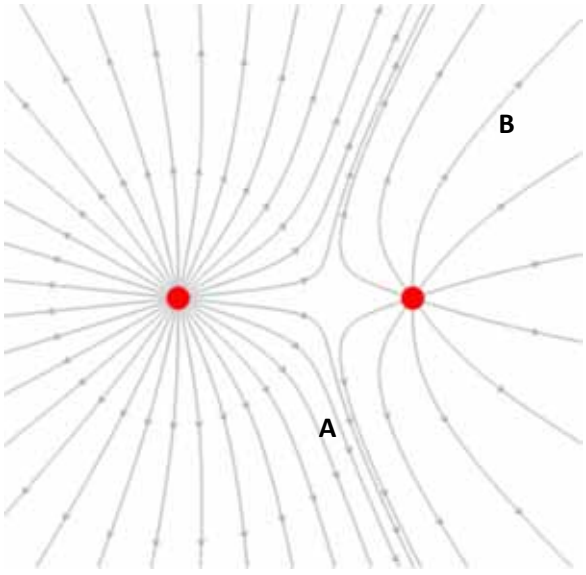
3. Three charges are arranged as shown on the right. What is the force (magnitude and direction) on the -15 mC charge?



4. Three charges are arranged in the right triangle shown on the right. What is the force (magnitude and direction) experienced by the 19 mC charge?



The electric field of two stationary particles is shown below.



5. What are the signs of the two charges?

6. The magnitude of the charge on the left particle is 12 C. What is the magnitude of charge on the right particle?

7. Using up, down, right, and left, describe the direction of the acceleration a negative charge would have if it were placed at A.

8. If the magnitude of the electric field at A is 7.7 N/C, what is the magnitude of the force a 115 mC charge experiences?

9. Is the magnitude of the electric field at B larger than, smaller than, or equal to 7.7 N/C?

10. Is there any point a charge could be placed so that it experiences a force of zero?