Electric Force Practice

Physics 104
Spring 2008

For the system of three charges shown , the charges are

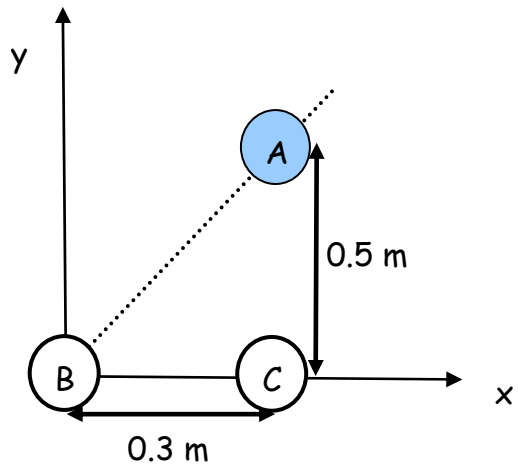
Q_A= +2.0 μC

Q_B= -4.0 μC

Q_C= +3.0 μC

$$F = \frac{k|q_1||q_2|}{r^2}$$

k=8.99x10^{+9}Nm^2/C^2



1. Draw a FBD for charge A

2. Find the magnitude of the force on charge A due to charge C, F_C.

3. What is the direction of F_C?

4. What is the magnitude of the force on charge A due to charge B, F_B?

5. What is the direction of F_B?

6. Find the x-components of F_B and F_C and find the total force in the x-direction, F_x.

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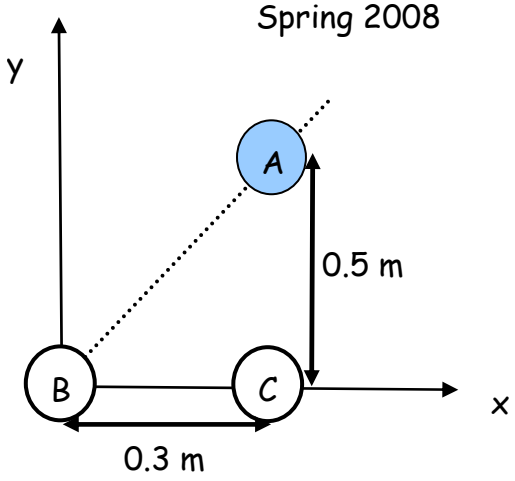
7. Find the y-components of F_B and F_C and find the total force in the y-direction, F_y.



8. Use the Pythagorean theorem to find the magnitude of the Force acting on A.

9. Find the direction of the total force acting on A. Include a sketch of the vectors.