


Post Lab Questions:

1. You redo the experiment with the sticky tape, making 2 strips of tape that are 1 half-inch (1.2 cm) wide piece of tape 20 cm long has a mass of about 0.16g and repel each other. You find that you can float one tape over the other when they are 1.5 cm apart. Assuming that they have the same number of charges, determine how much charge each one contains.

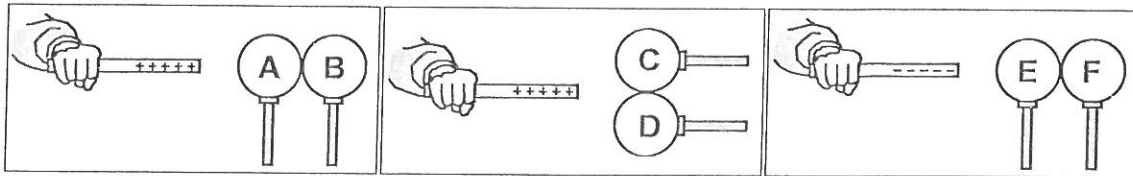


$$mg = \frac{kq_1q_2}{r^2} \rightarrow q = \left(\frac{mgr^2}{k} \right)^{1/2}$$

$$= \left(\frac{(0.0016)(9.8)(0.015)^2}{9 \cdot 10^9} \right)^{1/2}$$

$$= 6.26 \cdot 10^{-9} \text{ C}$$

2. A charged rod is moved to the same distance from a pair of uncharged metal spheres as shown. The spheres in each pair are initially in contact, but they are then separated while the rod is still in place. Then the rod is removed.



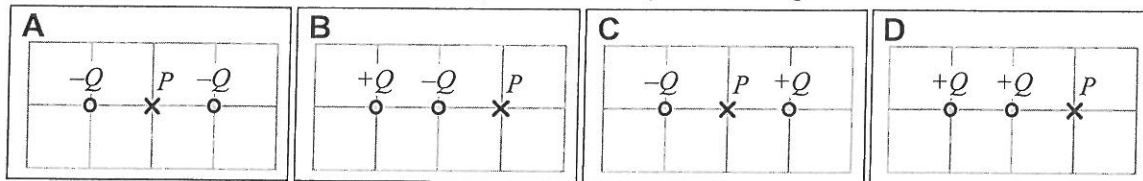
Rank the net charge on each sphere from most positive to most negative after the spheres have been separated and the charged rod removed.

B	E	C	D	A	F	OR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6		All the same	All zero	Cannot determine
Greatest						Least			

Explain your reasoning.

electrons move away from negative & toward positive. in C & D they do not leave spheres.

3. In each figure, two charges are fixed in place on a grid, and a point near those particles is labeled P. All of the charges are the same size, Q, but they can be either positive or negative.



Rank the strength (magnitude) of the electric force on a charge +q that is placed at point P.

C	D	B	A	OR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4		All the same	All zero	Cannot determine
Greatest				Least			

Explain your reasoning.