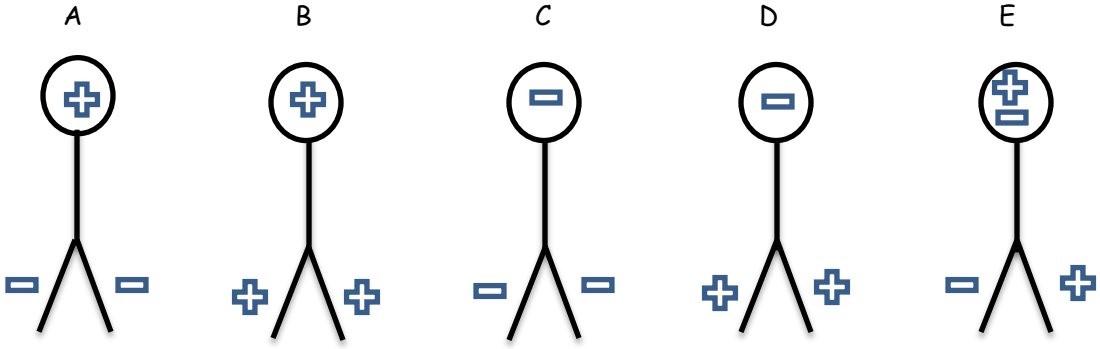
Name _____ Date _____ Period _____

On the blanks below, place the letter of the diagram that best represents the charge on an electroscope during each of the procedures described.



_____ 1. A positively charged rod is brought near, but not touching an uncharged electroscope.
_____ 2. A glass rod is charged positively by rubbing it with silk. The silk is touched to a neutral electroscope.
_____ 3. A positive rod is brought near a neutral electroscope and the electroscope is charged by induction.
_____ 4. An electroscope is charged by conduction by a positive rod.
_____ 5. A negatively charged rod is brought near a neutral electroscope.
_____ 6. A positively charged rod is brought near a positively charged electroscope.
_____ 7. A metal rod is brought in contact with a positively charged electroscope.

8. A charged rod is placed in a pile of paper confetti. First, the confetti is attracted to the rod, then it starts jumping off the rod. Explain what is happening in terms of electron flow.

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_____

9. Two identical metal insulated metal spheres have a charge of +8 and -4. Describe in terms of electron flow what happens when they are brought into contact.

_____
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_____

10. A charge of 5.0×10^{-5} C is attracted by another charge with a force of 3×10^{2} N when are separated by 15 cm. Find the magnitude of the other charge.

11. What is the magnitude of the charge on two identical spheres that exert a force on each other of 0.300 N when 75.0 cm apart?

12. What is the distance between two spheres, each with a charge of 2.5×10^{-6} C when the force between them is 0.50 N?

13. A sphere carrying a charge of +2.0μC is placed 15 cm from a sphere carrying a charge of -0.50μC. What if the force between the two spheres?

14. A negative charge of 3.0×10^{-6} C is located near two other charges. One positive charge of 3.0×10^{-6} C is located 20.0 cm to the west, a second negative charge of 4.5×10^{-6} C is 35.0 cm to the south. What is the net force on the negative 3.0×10^{-6} C charge.

15. Three charges are located on a straight line 25 cm from each other. If the charge is +6μC, what is the force on one of the end charges?