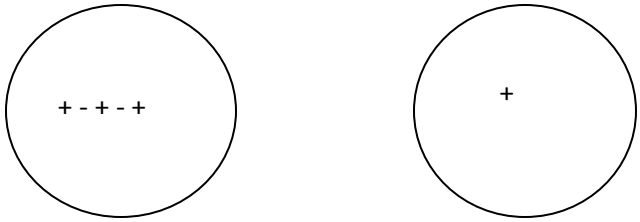
1. In an ionic compound, every single atom has either lost electrons (positive ions) or gained them(negative ion) . In a statically charged object like a blanket, a very small percentage of atoms have gained or lost electrons. Chemically, this makes sense. Otherwise, the blanket would be chemically transformed !

The statically charged blanket is not neutral. The rock is; the total charge from its positive ions blanaces that of the negative ions.


2. a) Y

   b) No. But it's a very common error to assume they do!

   c)

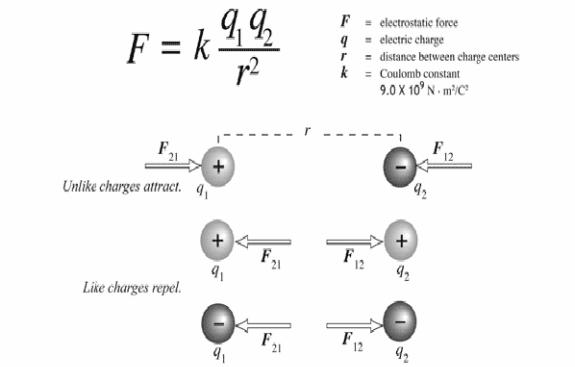



3.

$$F = \frac{kq_1q_2}{r^2}$$

$$9.0 \text{ X } 10^1 \text{ N} = \frac{9 \text{ X } 10^9 \text{ N m}^2/\text{C}^2 \left(1.0\ X10^{-6}\ C\right)x}{(1.0X10^{-2}m)^2}$$

$$x = \ 1\ X10^{-6}\ C$$



4. $2/1 = 1/x^2$

$2x^2 = 1$

$x = \sqrt{2}/2$

The distance should become $\frac{\sqrt{2}}{2} times\ the\ original\ .\ Since \frac{\sqrt{2}}{2} < 1,$
$it\ means\ the\ charges\ have\ to\ be\ closer\ together$

$$for\ the\ force\ to\ be\ stronger.$$

5. Consider 100.0 g and divide each percentage by the molar mass of the atom:

| | | |
|---|---|---|
| Na | 21.61g/22.99g/mole = | 0.93997 |
| Cl | 33.30 g/35.45g/mole = | 0.9394 |
| O | 45.09g/16.00g/mole = | 2.8181 |

We respect sig figs by using molar masses with 4 sig figs to accompany the 4 sig figs in the decimals.

Now divide through by the smallest number of moles: 1: 1: 3

$NaClO_3$

6. $C_1V_1 = C_2V_2$

$C_1V_1 = 0.25\ C_1V_2$

$V_2 = V_1/0.25 = 4.0\ V_1$

7. The repulsion of electrons.

8. $k = F*r^2/(q_1q_2) = Nm^2/C^2$