

Coulomb's Law Application problem #3

a) How many electrons are on a + 20 micro coulomb sphere (sphere 1)?

b) If sphere 1 now touches sphere 2 (Q = - 92 micro coulombs) what will be the charge on each after they are equalled out? (Give your answer as a charge in Coulombs and as a number of electrons).

Handwritten solution:

a) $N = \frac{Q}{e} = \frac{+20 \times 10^{-6} \text{ C}}{1.602 \times 10^{-19} \text{ C}} = 1.25 \times 10^{14}$ Deficit of e^-

b) $N = \frac{Q}{e} = \frac{36 \times 10^{-6} \text{ C}}{1.602 \times 10^{-19} \text{ C}} = 2.245 \times 10^{14}$ Surplus e^-

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