3. This problem also involves a direct application of Coulomb's Law.

$$F = k\, q_1\, q_2 / r^2$$

$$F = (9 \times 10^9\ N\ m^2 / C^2)\ (3.0 \times 10^{-8} C)(-4.0 \times 10^{-8} C) / (0.02m)^2$$

$$F = (-108 \times 10^{-7}) / 0.0004 \quad N$$

$$F = -0.027 \quad N$$

In this case the charges have unlike signs, so the force is attractive and acts along the line joining the centers of the charges. The negative sign in the final result tells us that the force is attractive just as the positive sign in the previous problem indicated a repelling force.