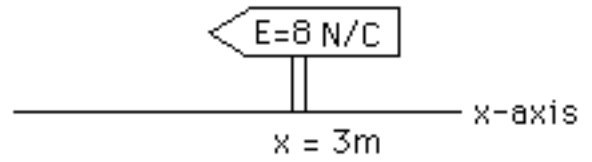
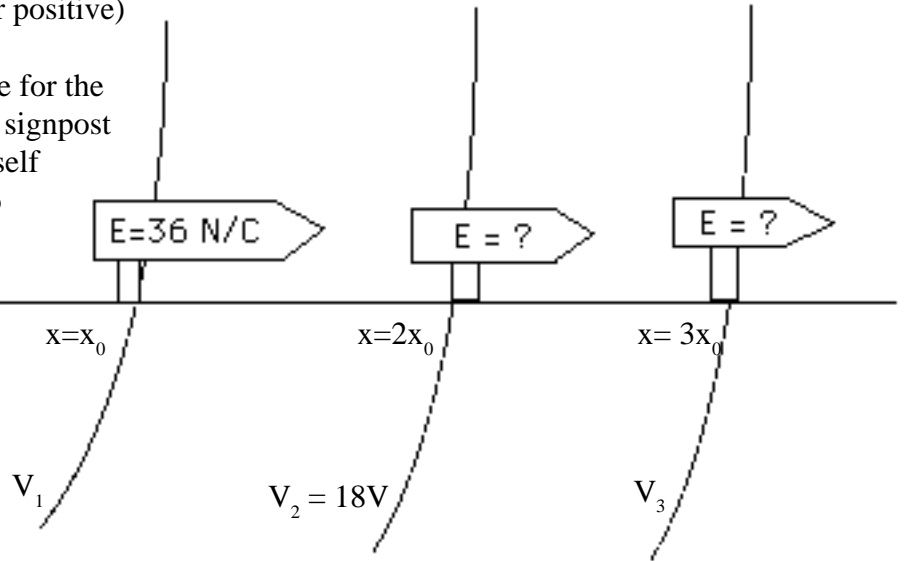


ELECTRIC FIELDS AND ELECTRIC POTENTIAL – QUIZ 17aH

1. (a) What is the force on an object with charge of $q = 2\text{C}$ placed at $x = 3\text{m}$? (b) A steel ball has a charge of 4 electrons on it. What is the electric force acting on it if it is placed on the x -axis at $x = 3\text{m}$? (c) If the electric field is due to a point charge, Q , located at $x = 5\text{m}$, what is the sign of this charge? (negative or positive)



2. A charge at the origin is responsible for the electric field shown here. As the only signpost painter in the universe, you find yourself walking along the x -axis. (a) What do you paint on the two empty signs? (b) What do you paint on the ground for V_1 and V_3 ? (c) If $Q = 4\text{nC}$ is located at the origin, how far ($x_0 = ?$) is the first signpost from $x=0$?



3. (a) If Madmorrigan starts at pt A with a charge of 3C on his helmet and moves to pt M, how much work does the electric field do? (b) The electric field is so strong that Madmorrigan lets it do all the work. From pt M the electric field is strongest in which direction? (A,B,C,D?) (c) If our hero starts from rest at pt E, what is his kinetic energy at pt H? (d) If he starts from rest at pt F, how much electric potential energy does he lose by the time he gets to pt I

