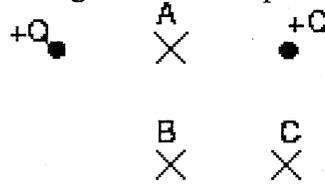
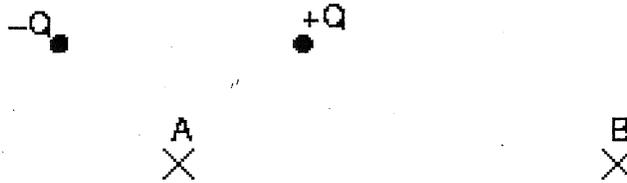


• WEEK 4

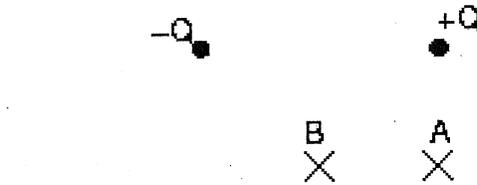
1. Suppose 4 equal positive charges  $+Q$  are arranged in a square as shown in the diagram. An "x" marks positions A, B, and C. Draw arrows showing the direction of the electric field at each of those points. (If the field strength is zero at a point, say so.)



2. Now we have 4 charges of equal magnitude, but 2 are positive and two are negative, arranged as shown. Find the direction of the electric field at point A (center of the square), and at point B. Show the direction with arrows whose tails are at each point.



3. Again we have 4 charges of equal magnitude, 2 positive and 2 negative. Find the direction of the electric field at points A and B. Indicate the direction with an arrow originating at each point. (If the field strength is zero, indicate this.)



4. As in the first problem, we have four positive charges of equal magnitude. Point A lies between two of the charges. If we call the length of one side of the square  $L$ , then point B lies a distance  $L$  from point A. (a) Draw arrows to show the direction of the field at each point. (b) At which point, A or B, is the electric field stronger? Support your answer with a well-reasoned argument. (You really don't have to do any calculations, but it is possible to argue without doubt that one is stronger than the other.)

