From Griffiths: 8.2, 9.2, 9.9, 12.42. 12.47

1. Two electrons with equal velocities v are moving side by side a a distance a apart. Midway between them is an infinite plane of positive charges which has a charge density of σ in its rest frame.In the frame S σ is at rest and in the frame S' the electrons are at rest.

   (a) Find the charge density σ' in S'.

   (b) Use Gauss's Law to find the field E' in S' due to the charge sheet.

   (c) How large must v be in order tha the electrons maintain the separation distance a.