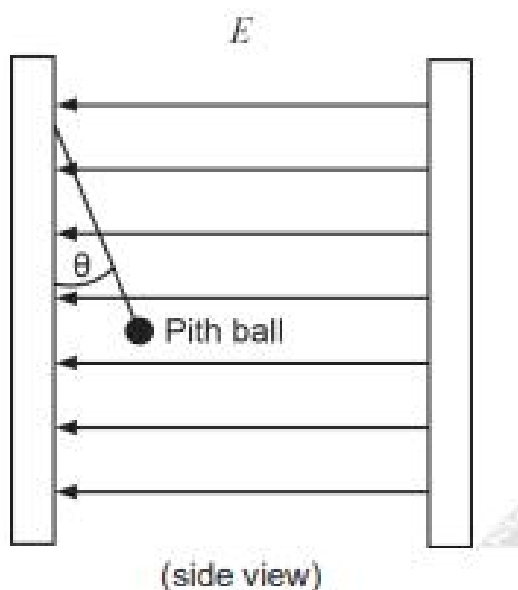


Question 7**(8 marks)**

A pith ball is a very small, lightweight object that readily picks up electric charge. A pith ball with a mass of $75.0 \times 10^{-6} \text{ kg}$ is suspended by a string attached to a charged plate. The pith ball has an excess of 2.00×10^{12} electrons on it and the electric field strength between the charged plates is 95.0 N C^{-1} .



(a) In the space below, draw a vector diagram of the forces acting on the pith ball. (3 marks)

(b) Calculate the angle between the string and the charged plate. (5 marks)