a) Consider a crystal structure like that of NaCl, but unlike NaCl in this crystal all atoms are of the same type. Assume that x-rays of = 1[nm] are incident at =30° to the surface of the crystal.

What is the lattice constant (distance between neighboring atoms) of the cubic crystal?

b) Consider a hypothetical “surface” for the same crystal, which goes along the diagonal in the unit cell. What is the distance of these atoms between each other? At what angle would you expect to see an x-ray to be incident on this hypothetical “surface”?