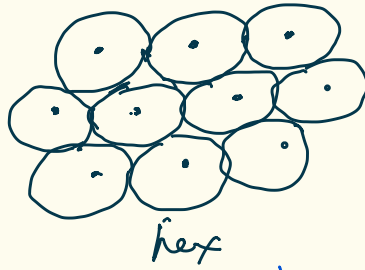
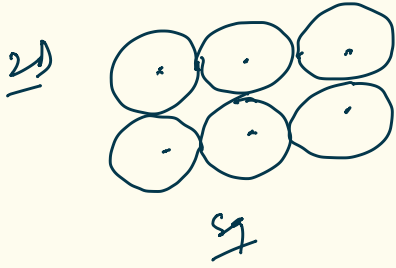


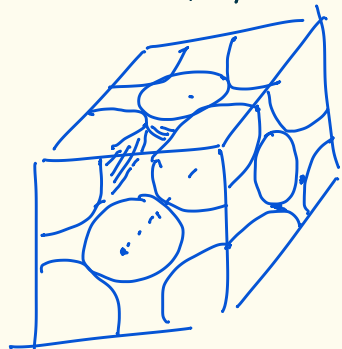
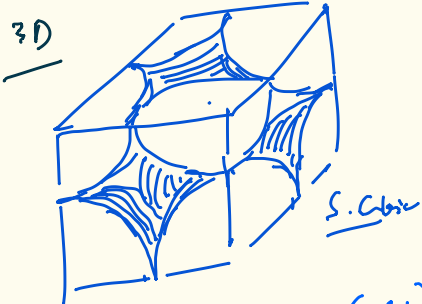
Packing fraction (PF)

Approximate atom as charged spheres.

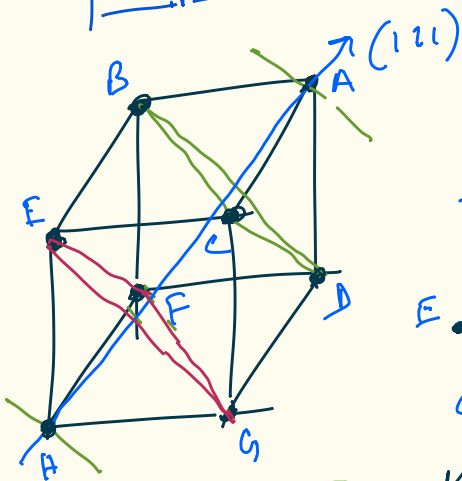
PF: Ratio of max vol of spheres centred at Bravais lattice pts, and volume of the unit cell.



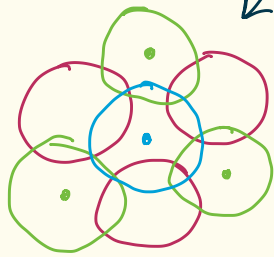
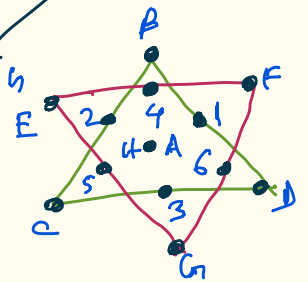
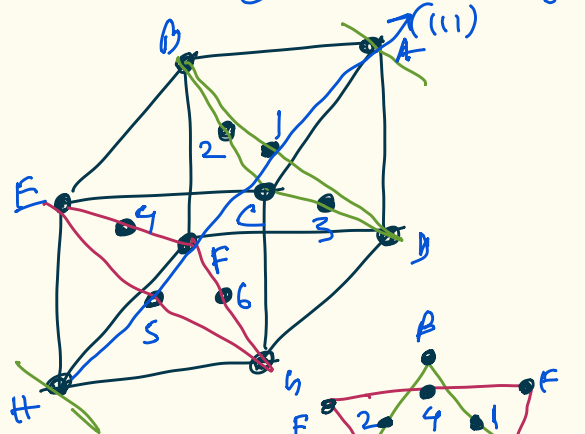
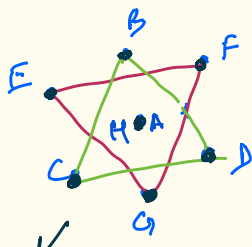
$PF(\text{hex}) > PF(\text{sq})$
 High PF \rightarrow closer proximity
 lower free space
 (generally).



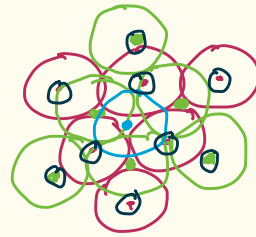
highest PF is FCC
 Why? It has hexagonal closed packing



View from (111) dir



gapped hex packing.



No gap hex closed packed.