



Fig. 222.01 *Equation for Omnidirectional Closest Packing of Spheres*: Omnidirectional concentric closest packings of equal spheres about a nuclear sphere form series of vector equilibria of progressively higher frequencies. The number of spheres or vertexes on any symmetrically concentric shell outer layer is given by the equation $10F^2 + 2$, where $F =$ Frequency. The frequency can be considered as the number of layers (concentric shells or radius) or the number of edge modules on the vector equilibrium. A one-frequency sphere packing system has 12 spheres on the outer layer (A) and a one-frequency vector equilibrium has 12 vertexes. If another layer of spheres are packed around the one-frequency system, exactly 42 additional spheres are required to make this a two-frequency system (B). If still another layer of spheres is added to the two-frequency system, exactly 92 additional spheres are required to make the three-frequency system (C). A four-frequency system will have 162 spheres on its outer layer. A five-frequency system will have 252 spheres on its outer layer, etc.