

## CHAPTER 12

12.13 *Compute the atomic packing factor for the rock salt crystal structure in which  $r_C/r_A = 0.414$ .*

12.16 *Calculate the density of FeO, given that it has the rock salt crystal structure.*

12.25 *Compute the theoretical density of diamond, given that the C—C distance and bond angle are 0.154 nm and  $109.5^\circ$ , respectively. How does this value compare with the measured density?*

12.27 *Compute the atomic packing factor for the diamond cubic crystal structure (Figure 12.16). Assume that bonding atoms touch one another, that the angle between adjacent bonds is  $109.5^\circ$ , and that each atom internal to the unit cell is positioned  $a/4$  of the distance away from the two nearest cell faces ( $a$  is the unit cell edge length).*