## Massachusetts Institute of Technology

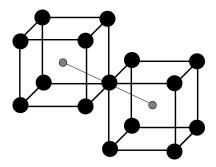
Department of Materials Science and Engineering 77 Massachusetts Avenue, Cambridge MA 02139-4307

3.012 Fundamentals of Materials Science and Engineering - Fall 2003

## <u>Problem Set Two Solutions</u> Structure Additional Problems

## **Problem 5**

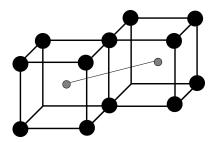
(a)



The cation-cation distance in this configuration is:

$$2(R_A + R_B)$$

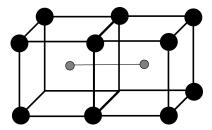
**(b)** 



The cation-cation distance in this configuration is:

$$2*\frac{\sqrt{2}}{\sqrt{3}}(R_A + R_B) = 1.63(R_A + R_B)$$

**(c)** 



The cation-cation distance in this configuration is:

$$\frac{2}{\sqrt{3}}(R_A + R_B) = 1.15(R_A + R_B)$$