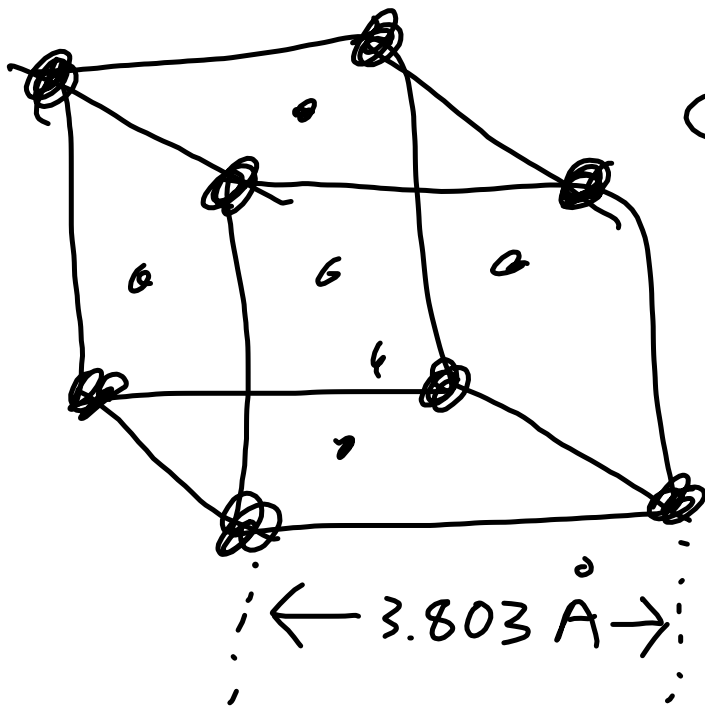


$$85.93 \text{ g} \left(\frac{1 \text{ mol}}{18.02 \text{ g}} \right) \left(\frac{6.01 \text{ kJ}}{1 \text{ mol}} \right) \\ = 28.7 \text{ kJ}$$



$$d = \frac{M}{V}$$

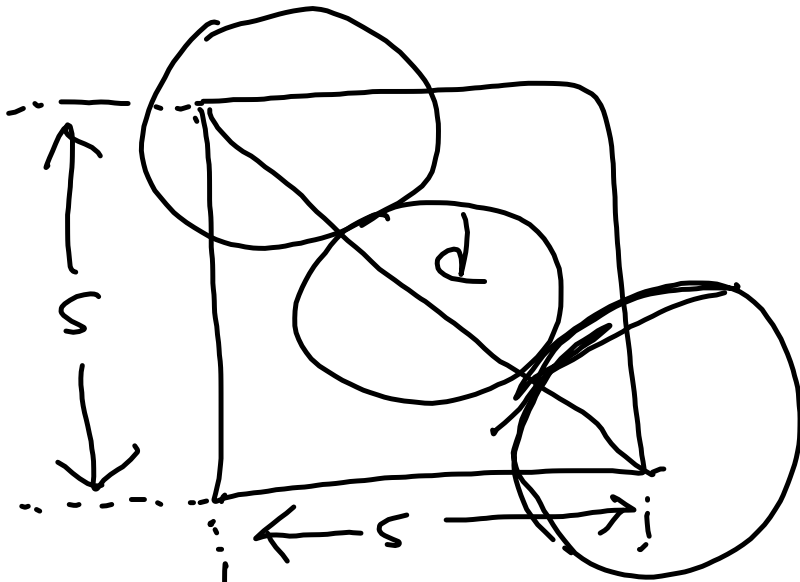
$$V = (3.803 \times 10^{-8} \text{ cm})^3$$

$$= 5.500 \times 10^{-23} \text{ cm}^3$$

$$\frac{102.9 \text{ g}}{1 \text{ mol}} \left(\frac{1 \text{ mol}}{6.022 \times 10^{23} \text{ atoms}} \right) \left(\frac{4 \text{ atoms}}{1 \text{ unit cell}} \right)$$

$$= 6.835 \times 10^{-22} \frac{\text{g}}{\text{unit cell}}$$

$$d = \frac{M}{V} = \frac{6.835 \times 10^{-22} \text{ g}}{5.500 \times 10^{-23} \text{ cm}^3} = 12.43 \frac{\text{g}}{\text{cm}^3}$$



$$d = 4r$$

$$d^2 = s^2 + s^2 = 2s^2$$

$$d^2 = 2s^2$$

$$d = s\sqrt{2}$$

$$4r = s\sqrt{2}$$

$$r = \frac{s\sqrt{2}}{4}$$

For
Face-
centered
cubic

$$r = \frac{(4.050 \text{ \AA})\sqrt{2}}{4} = 1.432 \text{ \AA}$$