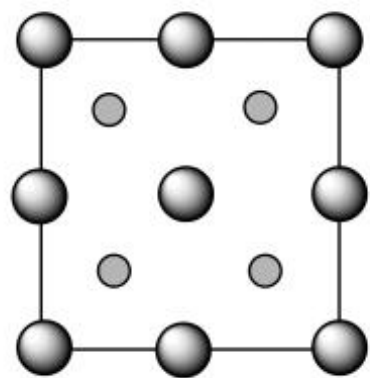
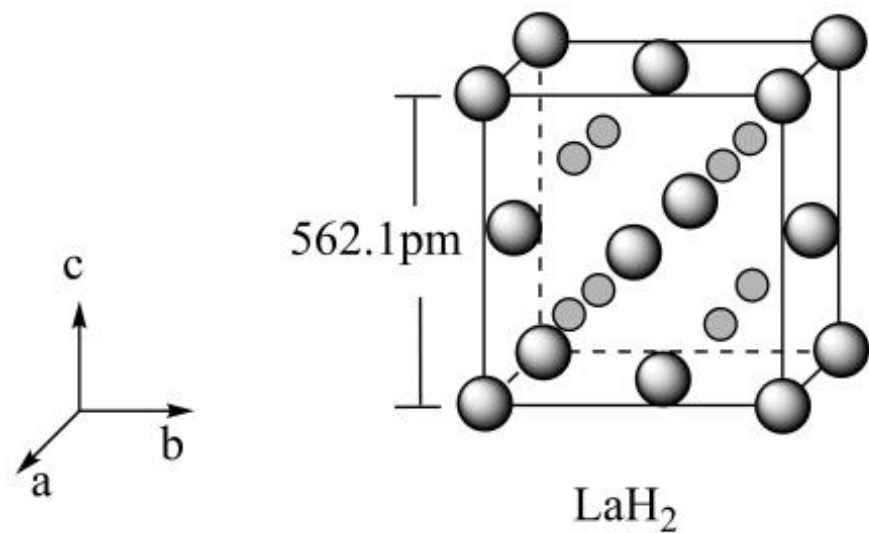
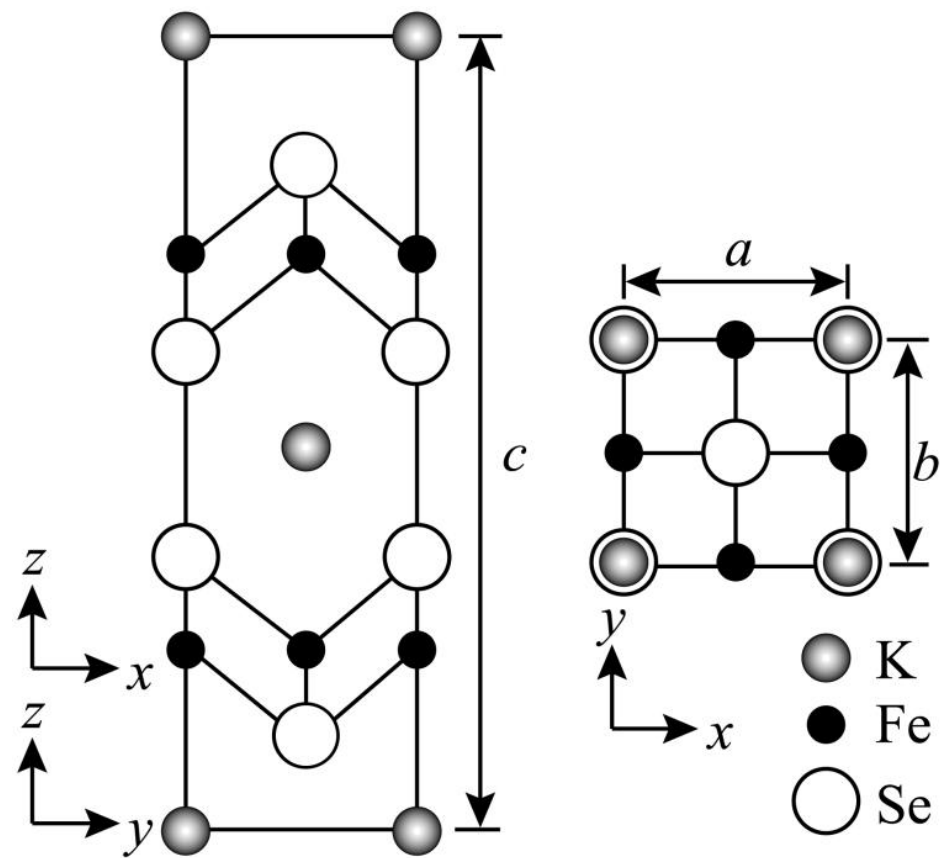


2023湖北卷

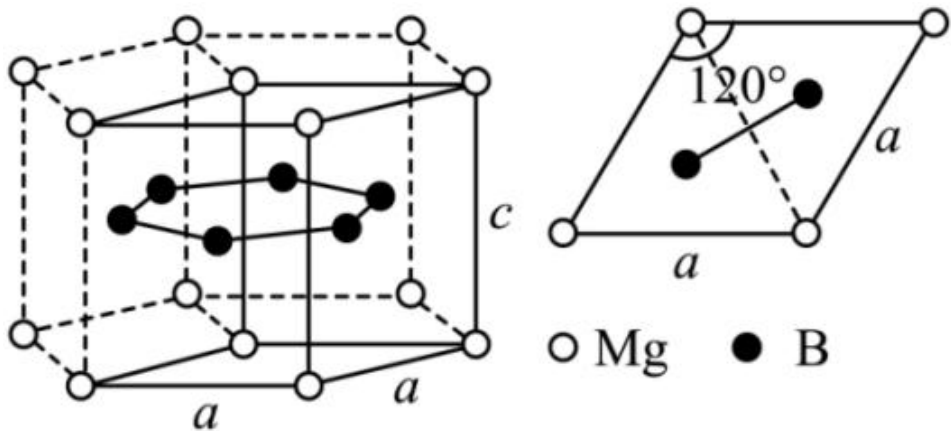


LaH_2 沿 c 轴投影

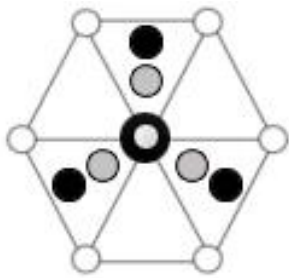
2022湖南卷



2023全国乙卷



2025陕甘青宁卷



2025海南卷

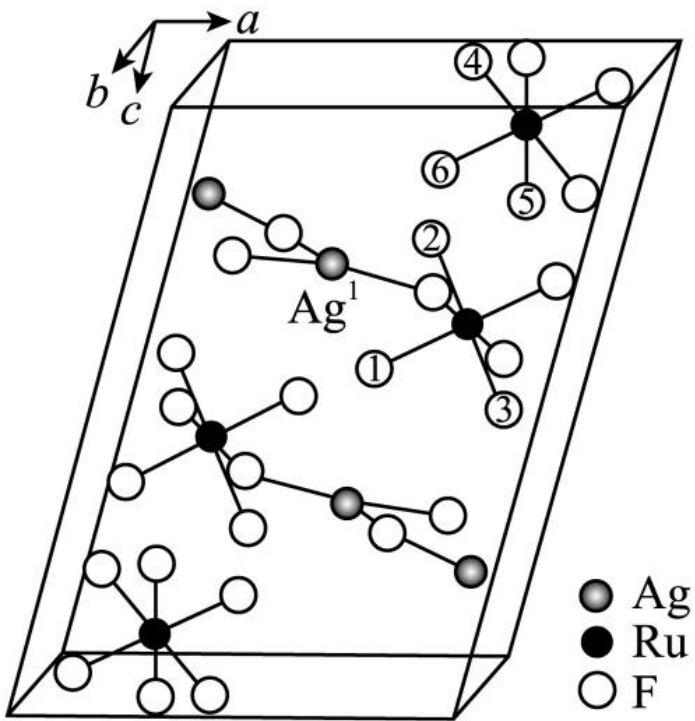


图1

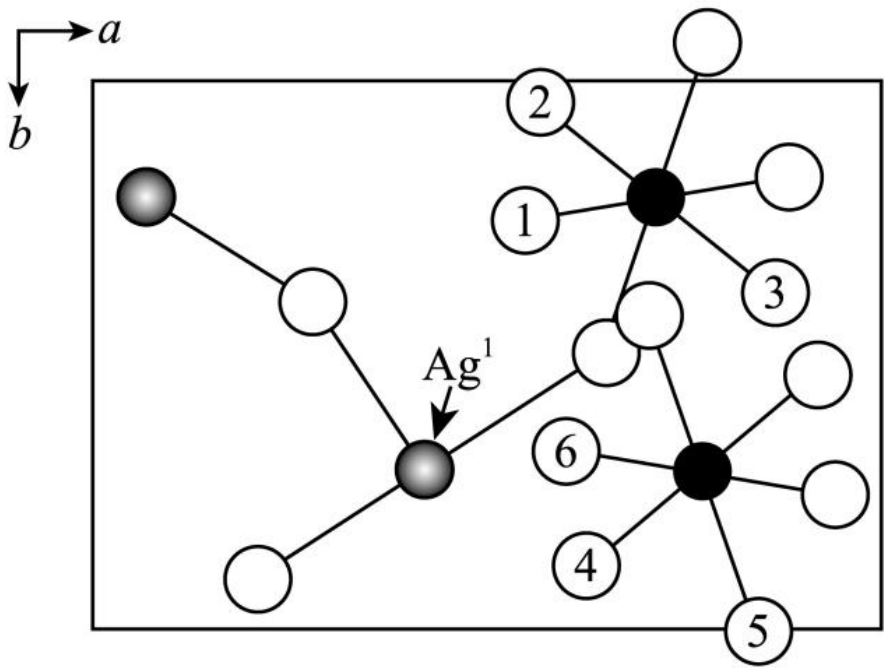


图2

Contents

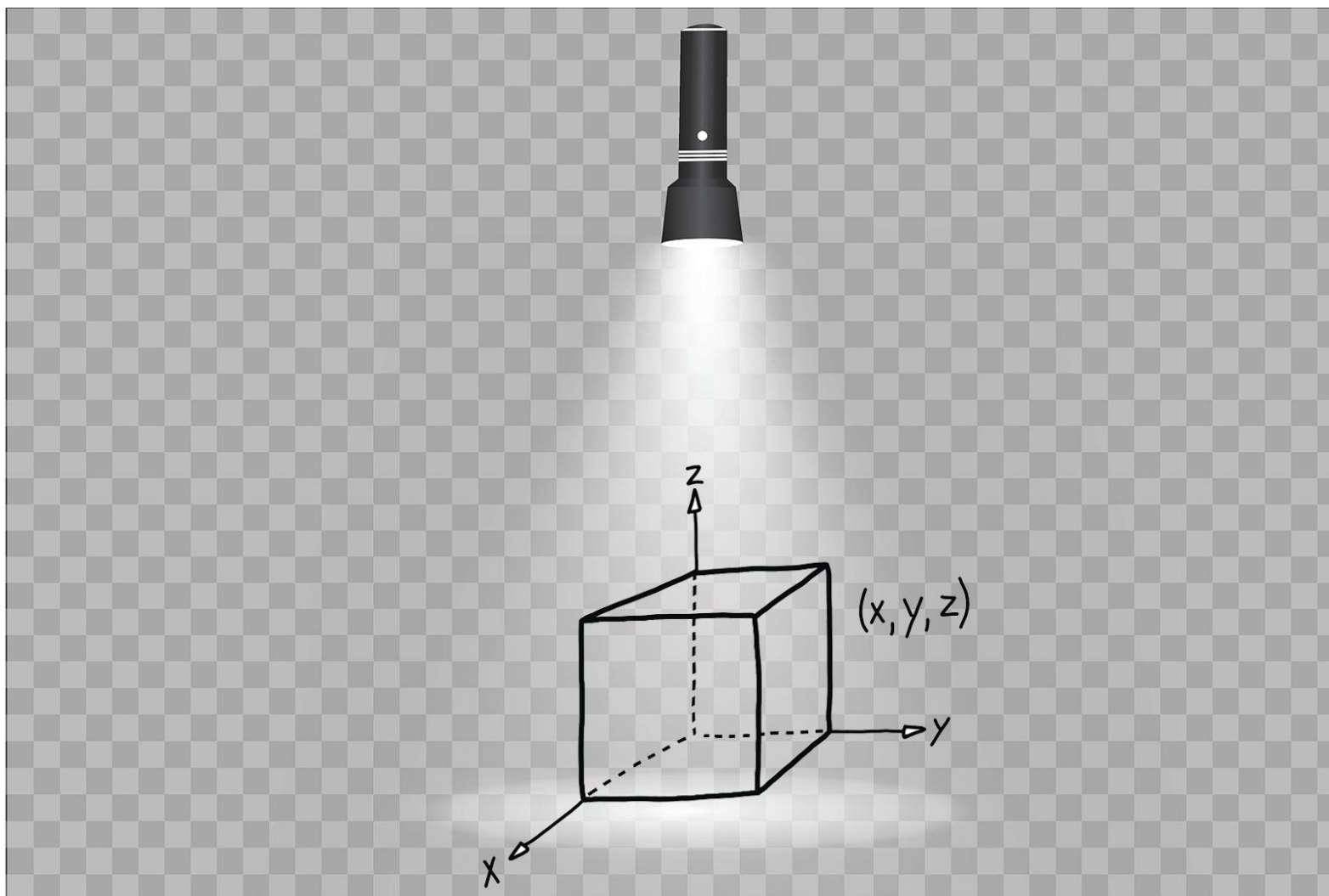
沿「坐标轴方向」的投影图

沿「体对角线方向」的投影图

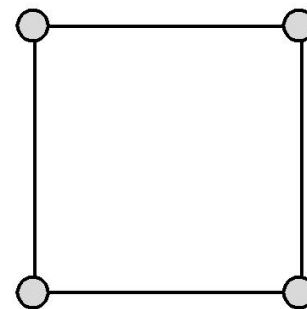
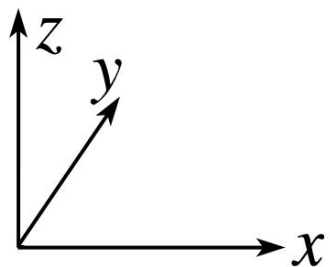
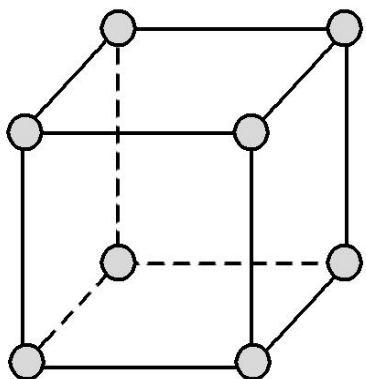
沿「面对角线方向」的投影图

「投影图」与「截面图」

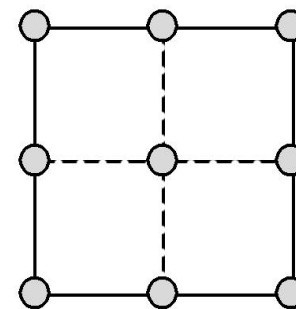
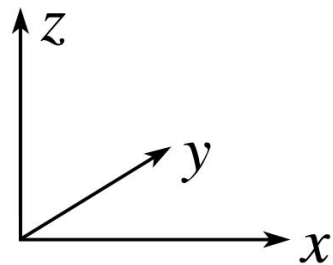
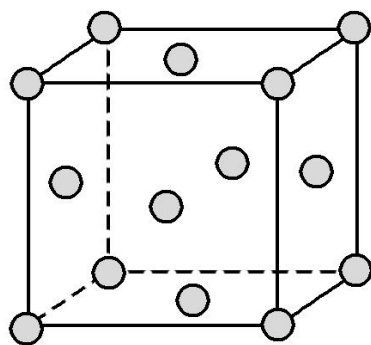
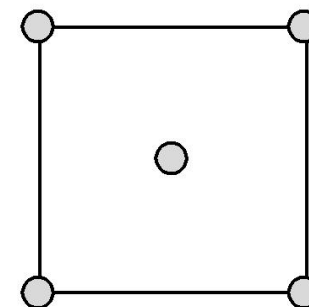
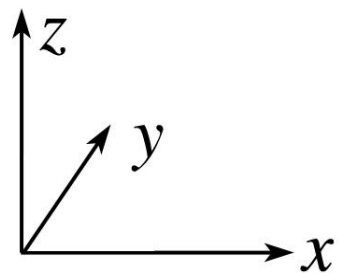
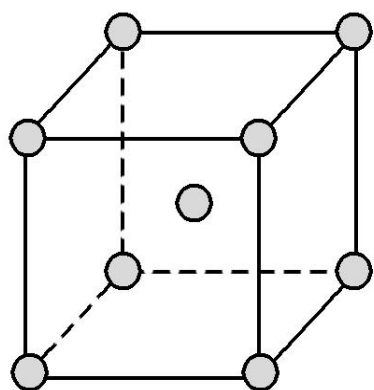
一、沿坐标轴方向



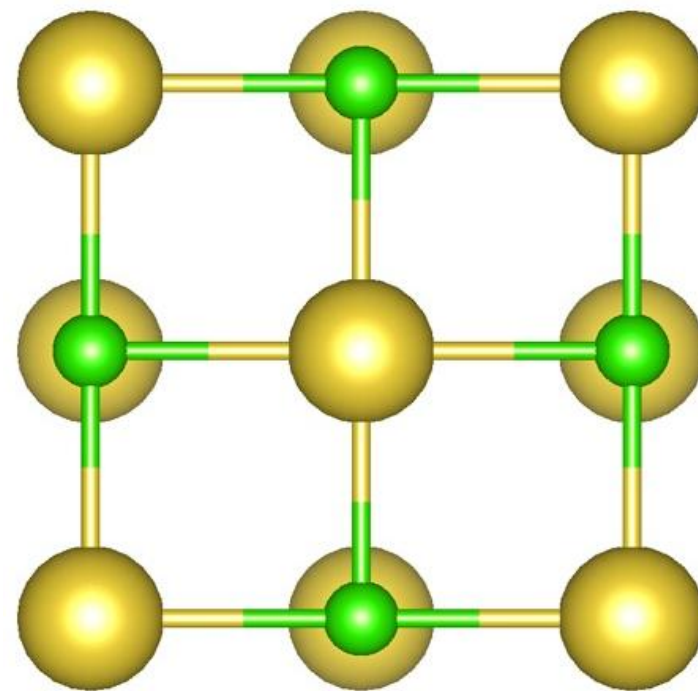
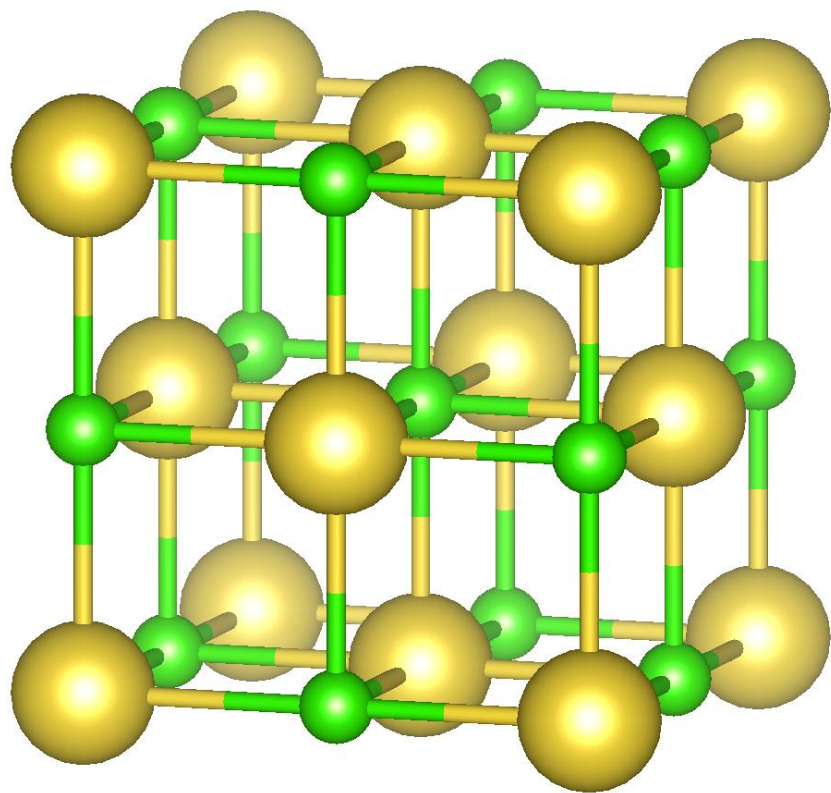
一、沿坐标轴方向



一、沿坐标轴方向

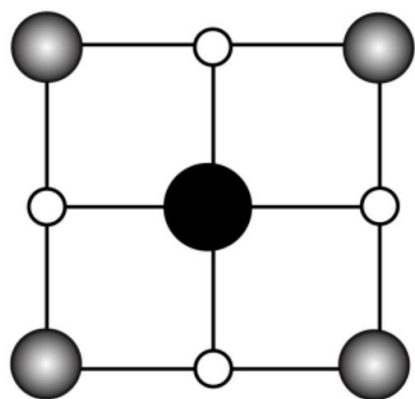


一、沿坐标轴方向

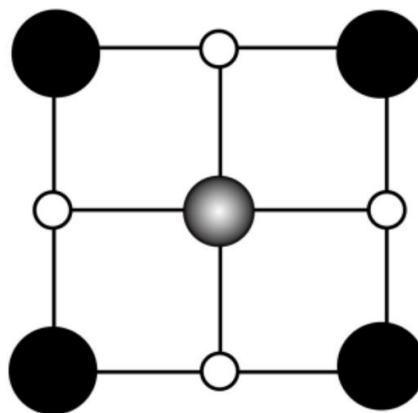


一、沿坐标轴方向

1. (2024 陕西商洛模拟) 一种立方钙钛矿型晶体 LaCrO_3 有两种晶胞结构, 其三视图如下(重叠处仅画出大的微粒), La 的配位数均是 12。



图a



图b

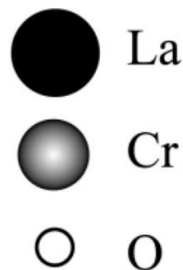
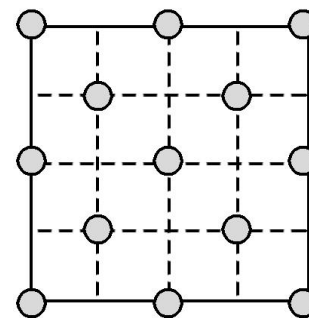
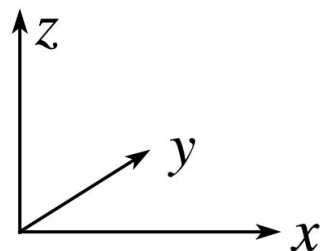
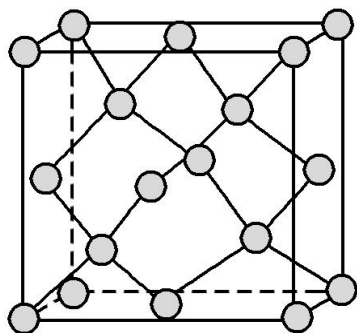
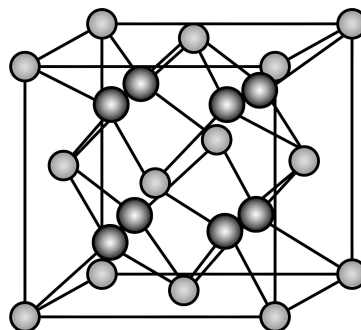
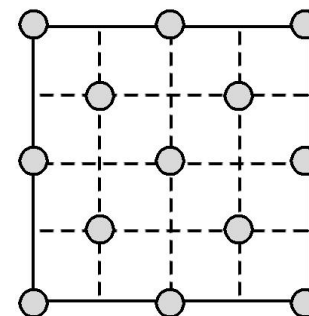
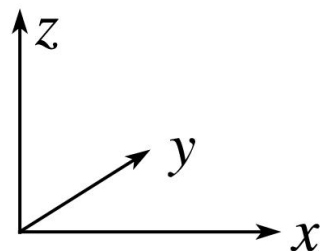
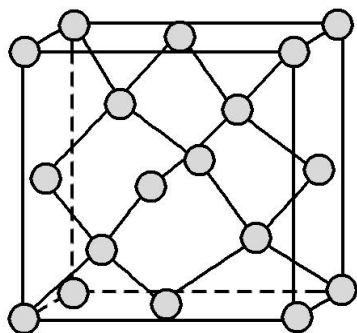


图 a 晶胞中 O 的位置为_____ (填“体心”“顶点”“面心”“棱心”, 下同); 图 b 晶胞中 O 的位置为_____。

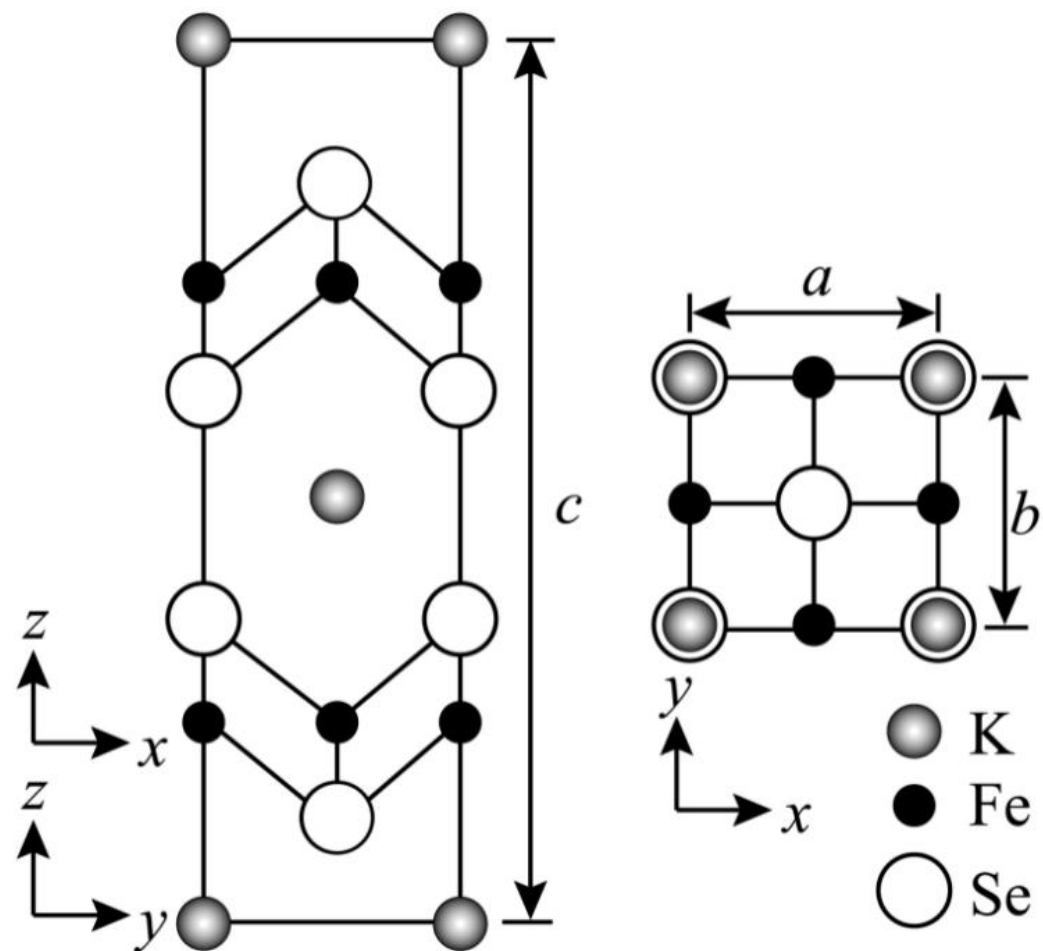
一、沿坐标轴方向



一、沿坐标轴方向



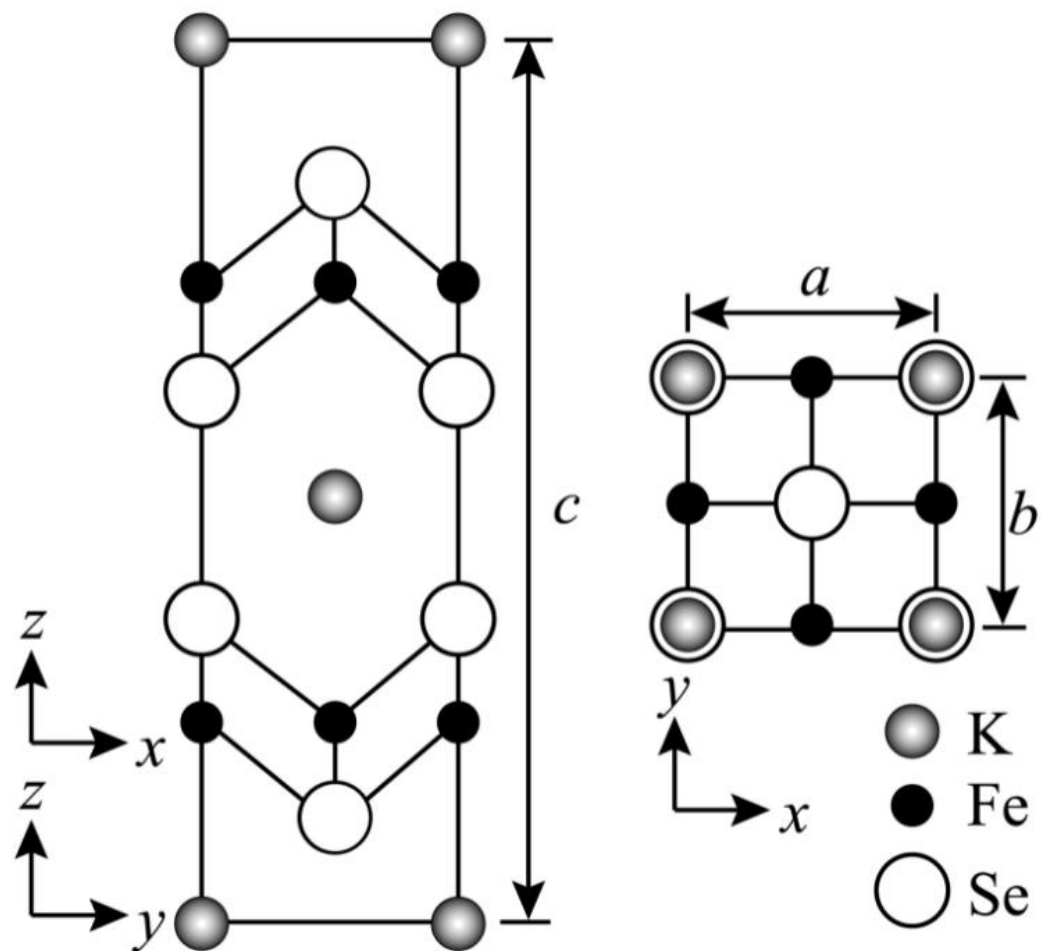
2. (2022 湖南卷) 钾、铁、硒可以形成一种超导材料，其晶胞在 xz 、 yz 和 xy 平面投影分别如图所示：



①该超导材料的最简化学式为_____；

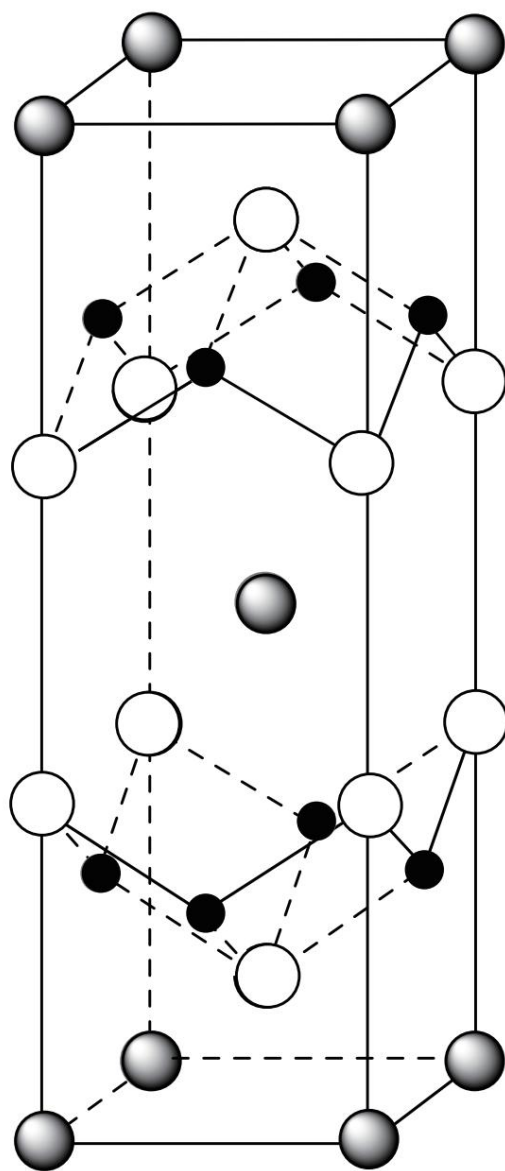
②Fe 原子的配位数为_____。

2. (2022 湖南卷) 钾、铁、硒可以形成一种超导材料，其晶胞在 xz 、 yz 和 xy 平面投影分别如图所示：



①该超导材料的最简化学式为_____；

②Fe 原子的配位数为_____。



3. （2025 海南卷）一种可用作强氧化剂的含钌多氟化物的晶体晶胞，如图 1 所示，完成(6)、(7)题。

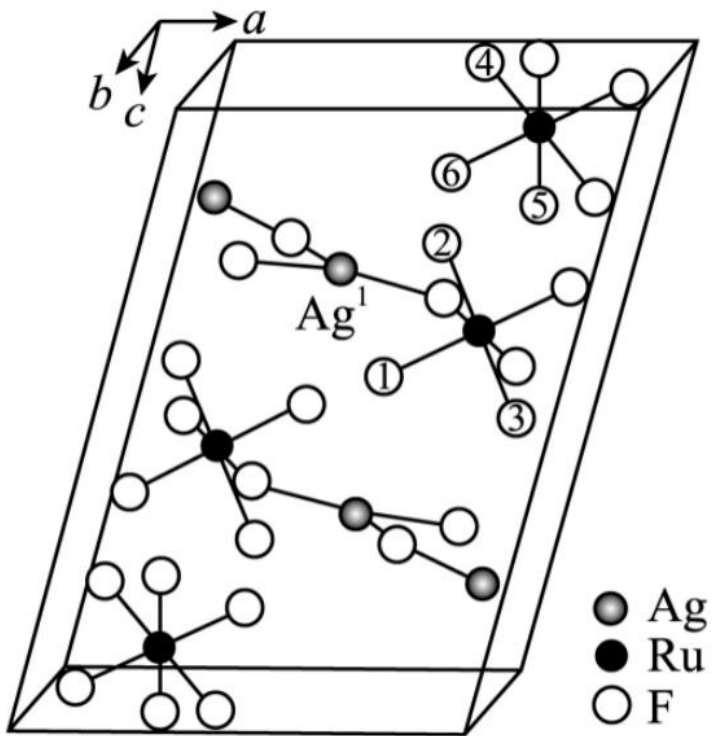


图1

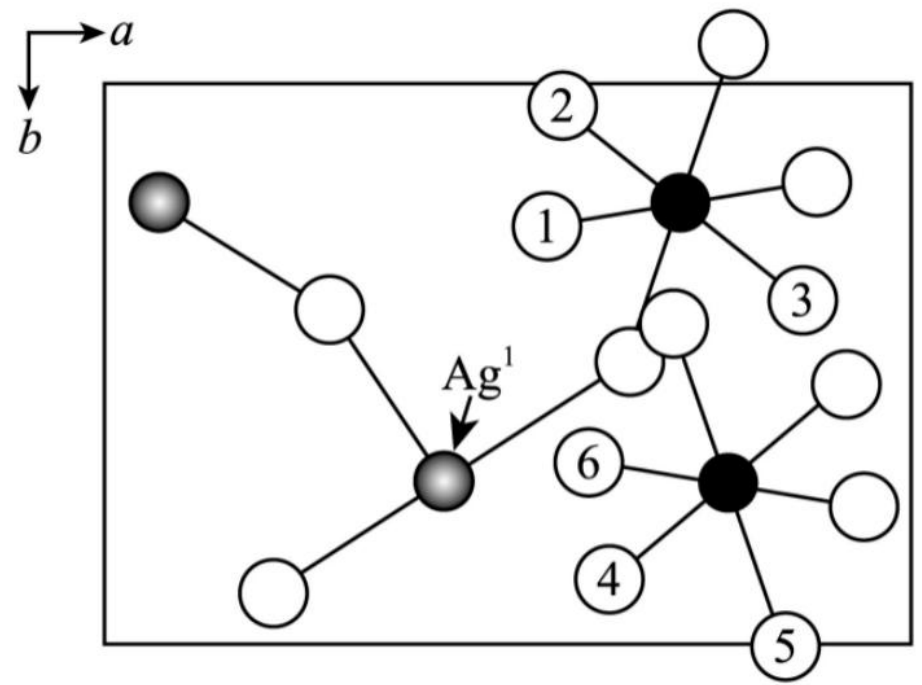
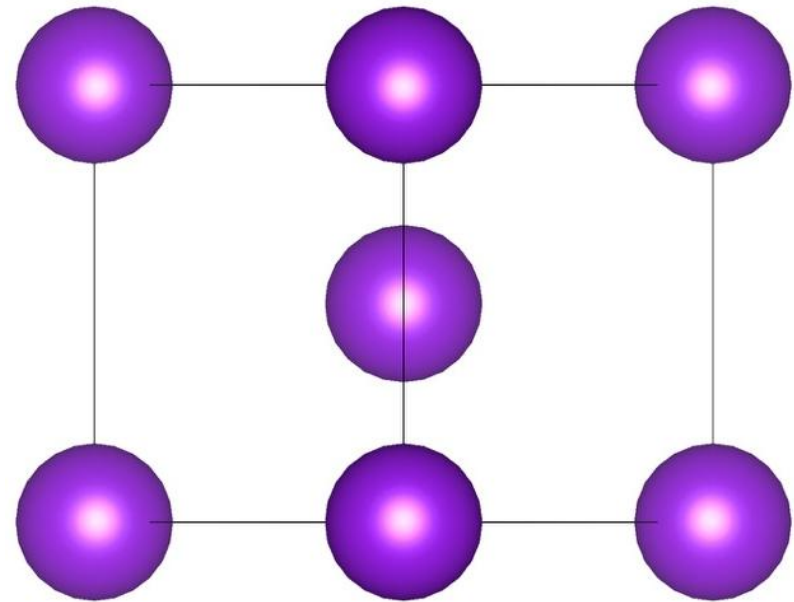
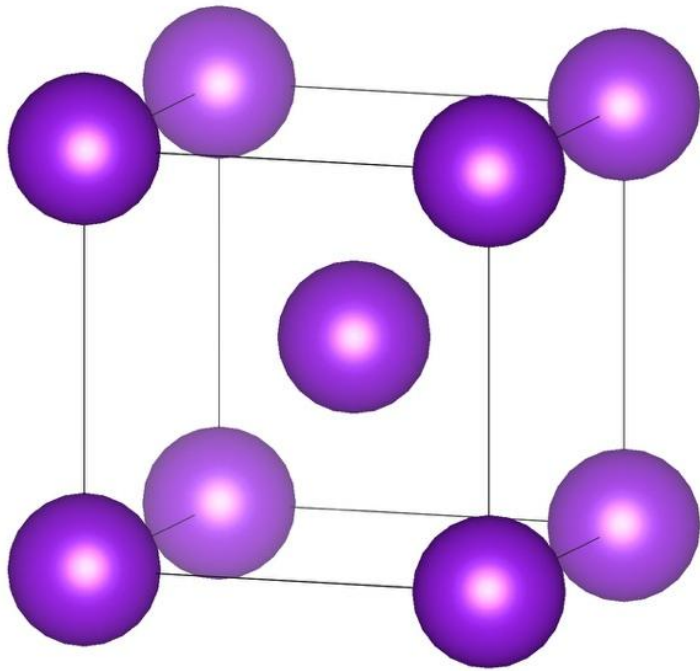


图2

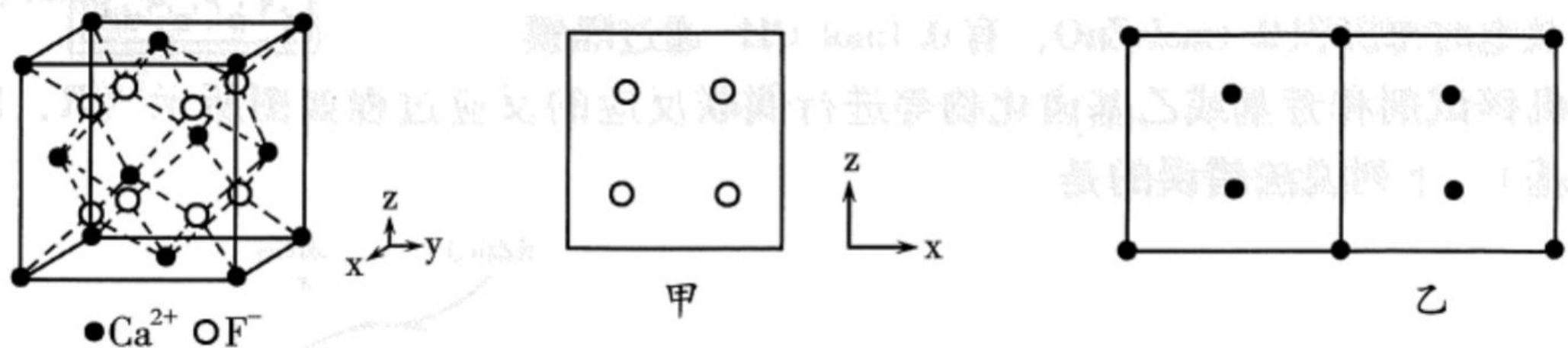
(7)每个 Ag 原子周围的紧邻氟原子围成规则配位结构， Ag^1 与该晶胞中氟原子的配位关系均已在图 1 呈现。沿 c 方向投影，见图 2(已放大处理)。 b 方向紧邻晶胞中与 Ag^1 配位的氟原子标号是_____。(紧邻晶胞中相应氟原子标号与图示晶胞相同)。

二、沿面对角线方向



二、沿面对角线方向

4. (2023 潍坊二模) CaF_2 的晶胞结构和部分离子的投影位置如图所示, 下列说法错误的是



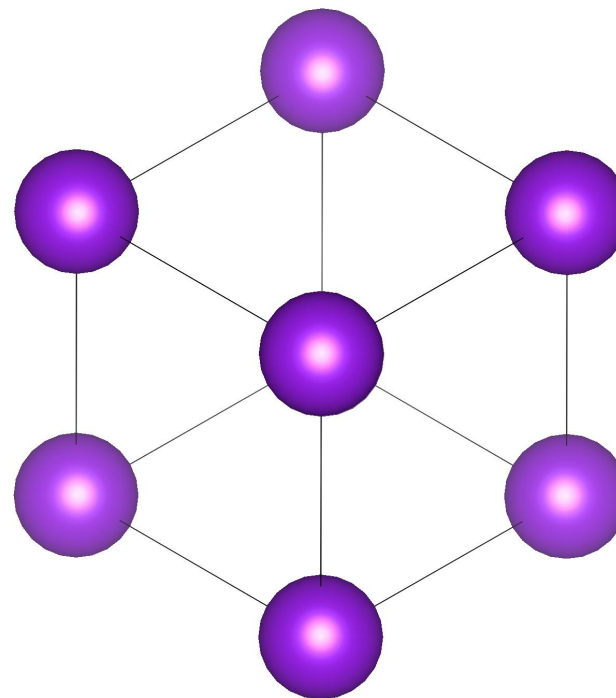
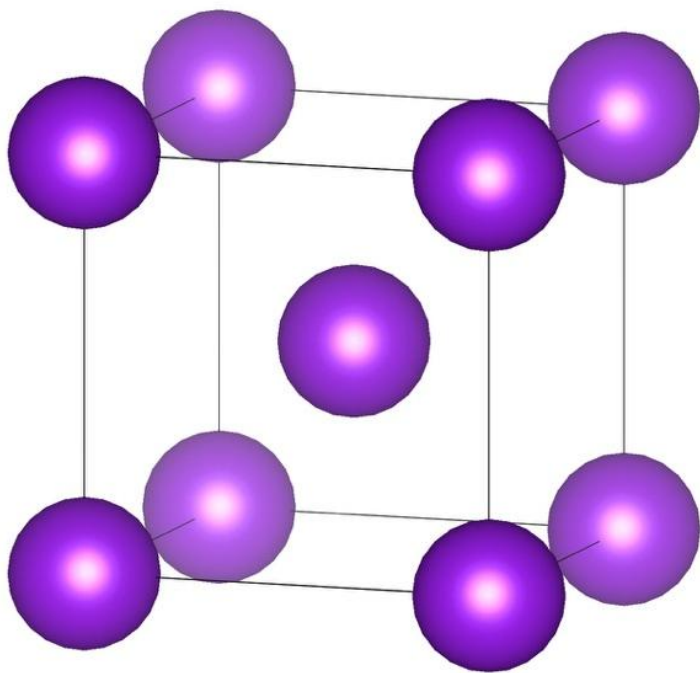
A. CaF_2 属于离子晶体

B. Ca^{2+} 的配位数为 8

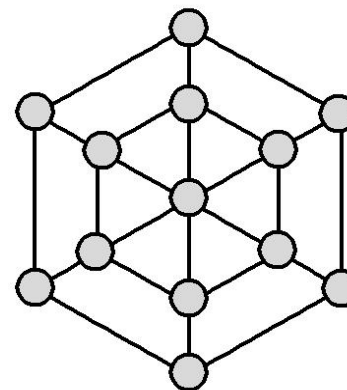
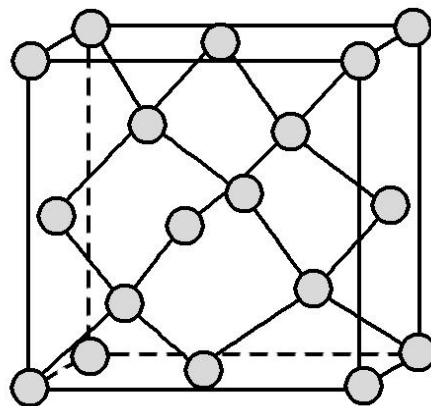
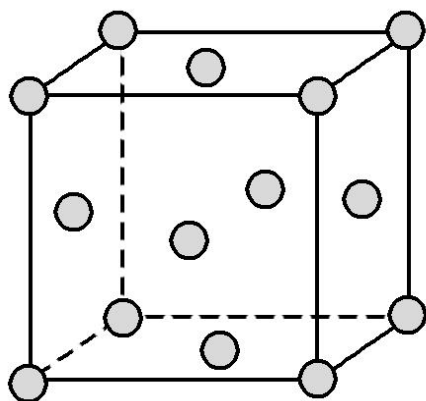
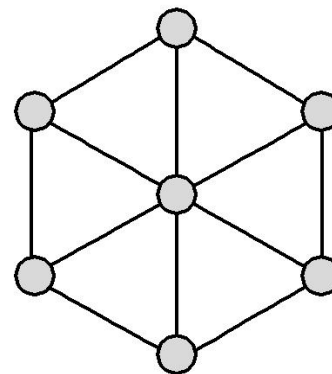
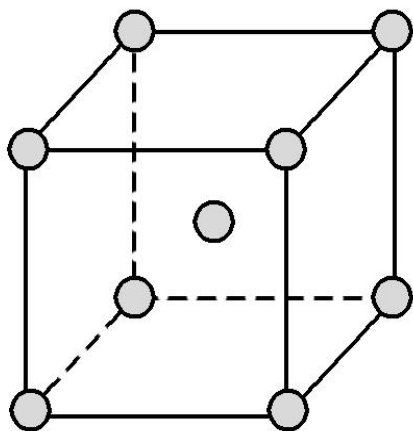
C. 图甲为 F^- 沿 y 轴投影图

D. 图乙为 Ca^{2+} 沿面对角线投影图

三、沿体对角线方向



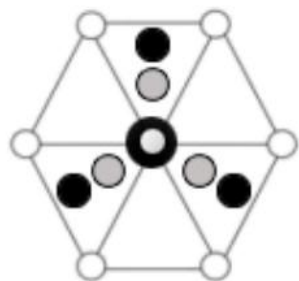
三、沿体对角线方向



三、沿体对角线方向

5. (2025 陕晋宁青, 8) 一种负热膨胀材料的立方晶胞结构如图, 晶胞密度为 $d \text{ g} \cdot \text{cm}^{-3}$, 阿伏加德罗常数的值为 N_A , 下列说法错误的是

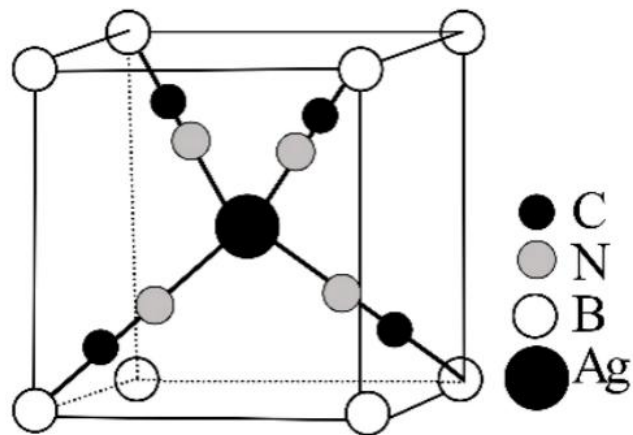
A. 沿晶胞体对角线方向的投影图为



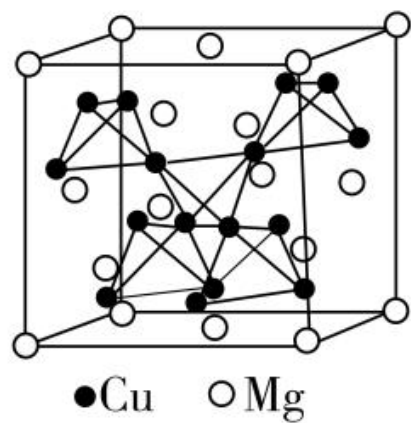
B. Ag 和 B 均为 sp^3 杂化

C. 晶体中与 Ag 最近且距离相等的 Ag 有 6 个

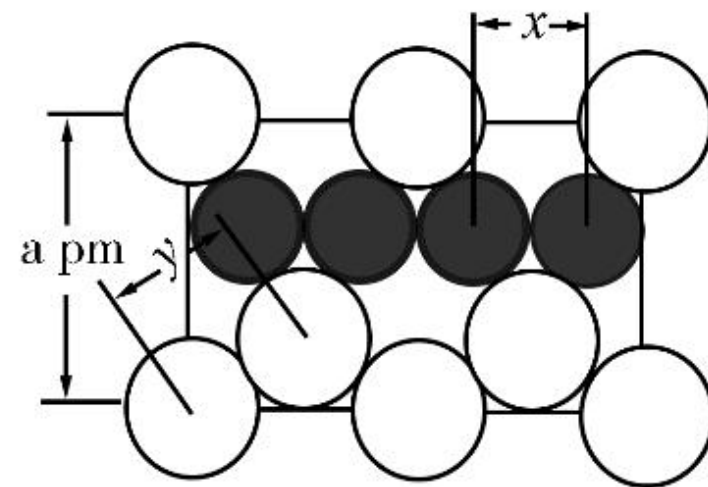
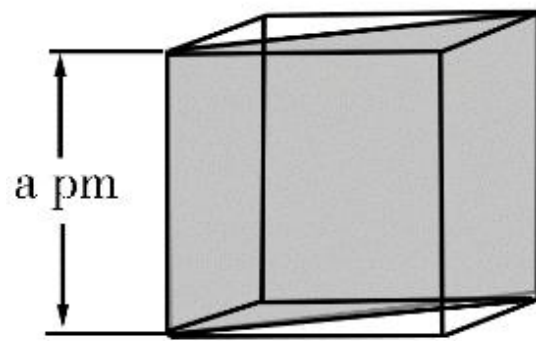
D. Ag 和 B 的最短距离为 $\frac{\sqrt{3}}{2} \times \sqrt[3]{\frac{223}{N_A d}} \times 10^{10} \text{ pm}$



四、投影图与截面图

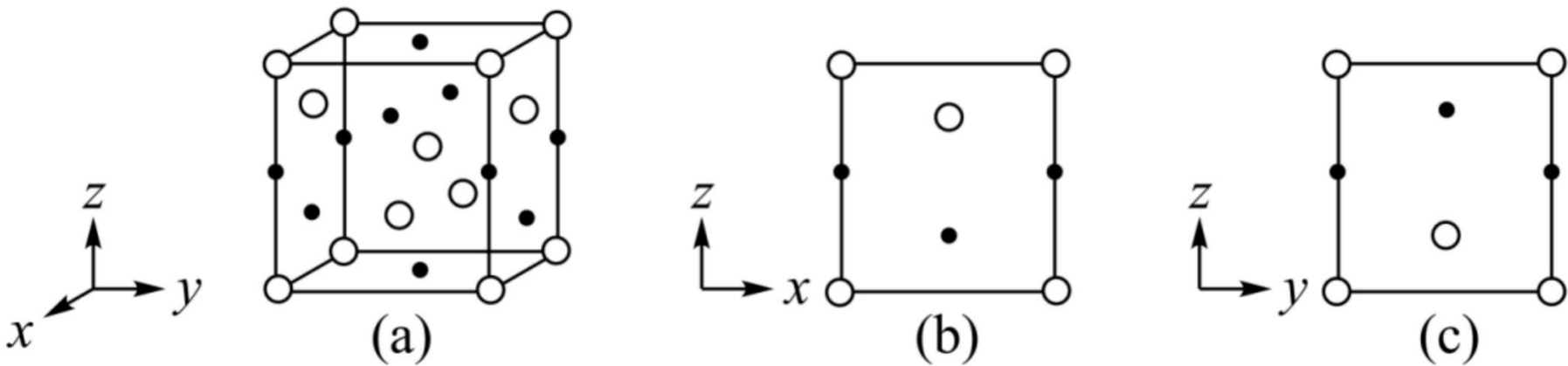


(a)



(b)

6. (2021 河北卷) 分别用 $\bigcirc$ 、 $\bullet$ 表示 H_2PO_4^- 和 K^+ , KH_2PO_4 晶体的四方晶胞如图(a)所示, 图(b)、图(c)分别显示的是 H_2PO_4^- 、 K^+ 在晶胞 xz 面、 yz 面上的位置:



①若晶胞底边的边长均为 $a\text{pm}$ 、高为 $c\text{pm}$, 阿伏加德罗常数的值为 N_A , 晶体的密度 $\text{g}\cdot\text{cm}^{-3}$ (写出表达式)。

②晶胞在 x 轴方向的投影图为 (填标号)。

