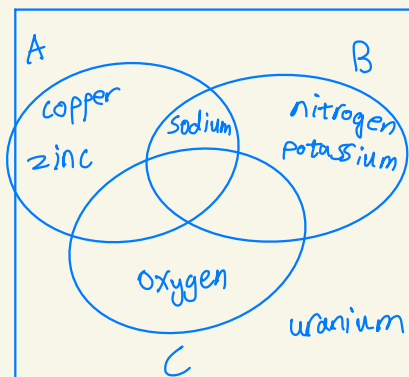


Problem 1

- (a) $\bar{A} = \{ \text{nitrogen, potassium, uranium, oxygen} \}$
- (b) $A \cup C = \{ \text{copper, sodium, zinc, oxygen} \}$
- (c) $(A \cap \bar{B}) \cup \bar{C} = \{ \text{copper, sodium, nitrogen, potassium, uranium, zinc} \}$
- (d) $\bar{B} \cap \bar{C} = \{ \text{copper, uranium, zinc} \}$
- (e) $A \cap B \cap C = \emptyset$
- (f) $(\bar{A} \cup \bar{B}) \cap (\bar{A} \cap C) = \{ \text{oxygen} \}$



Problem 2

- (a) region 5
- (b) region 4
- (c) regions 7, 4, 5
- (d) regions 7, 2, 6

$$\begin{aligned} &\bar{A} \cap \bar{B} \cap C \\ &A \cap C \cap \bar{B} \\ &(A \cup C) \cap \bar{B} \\ &\bar{C} \end{aligned}$$