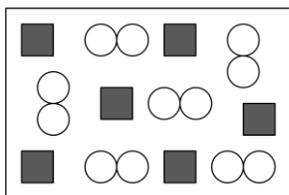


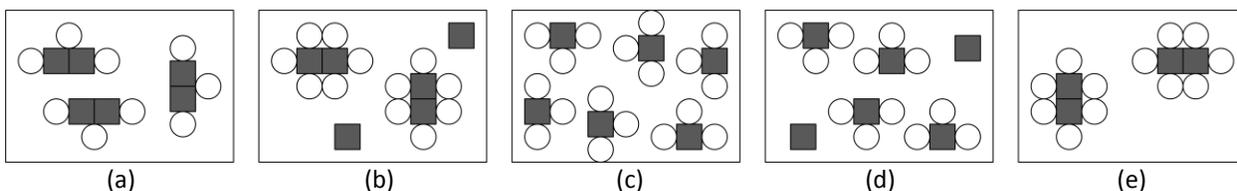
Name:

Student ID:

1. A mixture of S atoms (■) and O₂ molecules (○○) in a closed container is represented in the diagram:



Which diagram represents the contents of the container after the mixture reacts as completely as possible according to the equation: $2S + 3O_2 \rightarrow 2SO_3$

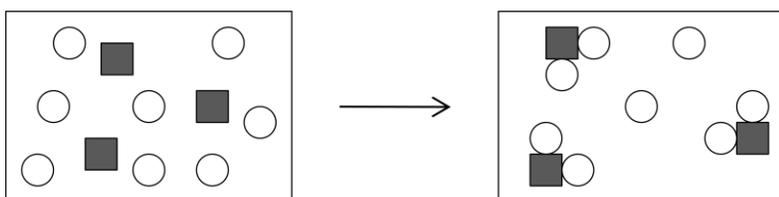


2. A mixture of 2 moles of H₂ and 2 moles of O₂ reacts according to the equation: $2H_2 + O_2 \rightarrow 2H_2O$

What is the limiting reactant, and how many moles of the excess reactant remain after the reaction is complete?

- | | Limiting reactant | Excess reactant remaining |
|-----|---|---------------------------|
| (a) | O ₂ | 1 mol O ₂ |
| (b) | O ₂ | 1 mol H ₂ |
| (c) | H ₂ | 1 mol O ₂ |
| (d) | H ₂ | 1 mol H ₂ |
| (e) | No reaction occurs since the equation does not balance with 2 mol H ₂ and 2 mol O ₂ | |

3. The reaction of element X (■) with element Y (○) is represented in the diagram:



Which equation best describes this reaction?

- (a) $3X + 8Y \rightarrow X_3Y_8$
 (b) $X_3 + Y_8 \rightarrow 3XY_2 + 2Y$
 (c) $X + 2Y \rightarrow XY_2$
 (d) $3X + 8Y \rightarrow 3XY_2 + 2Y$
 (e) $X_3 + Y_8 \rightarrow 3XY_2 + Y_2$

4. How did this recitation compare to the others?