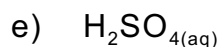
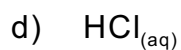
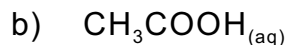


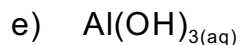
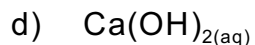
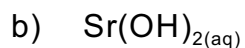
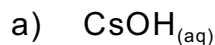
## Acid-Base Theories (Theoretical Definitions)

### Arrhenius Acids and Bases

1. Use Arrhenius Theory to write equations that show each of the following are ACIDS.

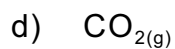
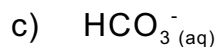


2. Use Arrhenius Theory to write equations that show each of the following are BASES.



### Modified Arrhenius Theory

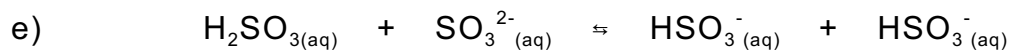
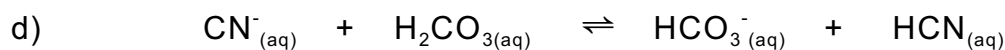
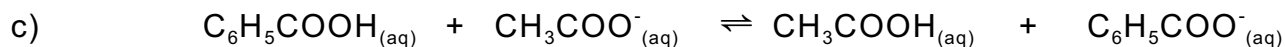
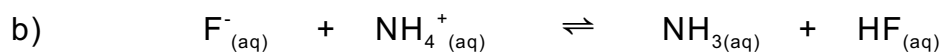
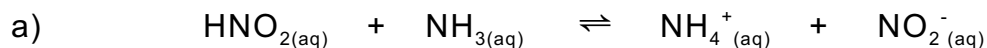
3. Use Modified Arrhenius Theory to write equations for each of the following ACIDS .



4. Use Modified Arrhenius Theory to write equations for each of the following BASES.
- a)  $\text{NH}_{3(\text{aq})}$
- b)  $\text{HCO}_{3(\text{aq})}^-$
- c)  $\text{CO}_{3(\text{aq})}^{2-}$
- d)  $\text{S}_{(\text{aq})}^{2-}$
- e)  $\text{CN}_{(\text{aq})}^-$
5. List two Modified Arrhenius acids that CANNOT be Arrhenius acids.
6. List two Modified Arrhenius bases that CANNOT be Arrhenius bases.

### Brønsted-Lowry Acids and Bases

7. Use BLT to identify each reactant and product as an acid or base.



8. Write the formula of three amphoteric compounds.