FUNCTIONAL GROUP IDENTIFICATION WORKSHEET

1. Identify the functional groups on the following organic molecules.

   a. [ organic molecule diagram ]
      ________________

   b. [ organic molecule diagram ]
      ________________

   c. [ organic molecule diagram ]
      ________________

   d. [ organic molecule diagram ]
      ________________

   e. [ organic molecule diagram ]
      ________________

2. Draw simple organic molecules that contain the following functional groups.

   f. Cycloalkane

   g. Amine

   h. Ether

   i. Ester

   j. Aldehyde
3. Identify the functional group in each of the following molecules.

   a. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{H} \\
      \text{H}
      \end{array} \]
   

   b. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{NH}
      \end{array} \]

   c. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{H}
      \end{array} \]

   d. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{O}
      \end{array} \]

   e. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{O}
      \end{array} \]

   f. 
      \[ \begin{array}{c}
      \text{O} \\
      \text{Br}
      \end{array} \]

4. Draw simple molecules that contain the following functional groups. Draw as **skeleton** structures, as shown above – do **not** draw carbons, but only lines to represent bonds between them. **Do not** draw hydrogens if they are attached to a carbon atom.

   a. Carboxylic Acid

   b. Halide

   c. Ester

   d. Amine

   e. Ketone

   f. Aldehyde