Constitutional Isomers

Name: ____________________

1. Identify the following structures as the same, constitutional isomers or different.
   a) 
   b) 
   c) 

2. Classify the following alcohols as primary, secondary or tertiary.
   a) 
   b) 
   c) 
   d) 
   e) 

3. Classify the following amines as primary, secondary or tertiary.
   a) 
   b) 
   c) 
   d) 
   e) 
   f) 

4. There are four alkyl bromides with the formula C₄H₉Br. Write their structural formulas and classify each as primary, secondary or tertiary.
5. There are seven isomeric compounds with the formula \( \text{C}_4\text{H}_10\text{O} \). Write their structures and classify each compound according to its functional group.

6. Write the structural formulas for each of the following:

   a) Three primary alcohols with the formula \( \text{C}_4\text{H}_8\text{O} \).

   b) A secondary alcohol with the formula \( \text{C}_3\text{H}_6\text{O} \).

   c) A tertiary alcohol with the formula \( \text{C}_4\text{H}_8\text{O} \).

   d) Two esters with the formula \( \text{C}_3\text{H}_6\text{O}_2 \).

   e) Four primary alkyl halides with the formula \( \text{C}_5\text{H}_{11}\text{Br} \).

   f) Three secondary alkyl halides with the formula \( \text{C}_5\text{H}_{11}\text{Br} \).
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<tr>
<td>g)</td>
<td>A tertiary alkyl halide with the formula C₅H₁₁Br.</td>
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<td>h)</td>
<td>Three aldehydes with the formula C₅H₁₀O.</td>
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<td>i)</td>
<td>Three ketones with the formula C₅H₁₀O.</td>
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<td>j)</td>
<td>Two primary amines with the formula C₃H₉N.</td>
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<td>k)</td>
<td>A secondary amine with the formula C₃H₉N.</td>
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<td>l)</td>
<td>A tertiary amine with the formula C₃H₉N.</td>
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<td>m)</td>
<td>Two amides with the formula C₂H₅NO.</td>
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