CHE 112 Alkene Nomenclature

1. Find the longest continuous C chain that includes the C=C. The number of C's in this chain gives the root name. Use cylco prefix if the longest chain is a ring.

2. Number the C chain so that the double bond will be designated with the lowest number rather than a substituent (i.e., C=C has a higher priority than a substituent).

- If there are two options with the same number of C's, choose the numbering which gives the lower number for a substituent at the first instance of difference.

3. Indicate the position of the double bond and the substituents by number location. Substituents and their locations precede the location of the double bond and the root name.

- C=C involves sequentially numbered C's, but only the lower number is noted.
- If a substituted ring, the C=C is between C1 & C2 and is not overtly designated by number location. (For an unsubstituted ring, there is no number location needed.)

4. Disubstitued Alkenes: If applicable, indicate *cis* or *trans*.

▪ Note: If one of the C's of the double bond is bonded to two identical groups, there are no stereoisomers.

Use *cis* prefix if both substituents are on the same side of the double bond.
Use *trans* prefix if the substituents are on opposite sides of the double bond.

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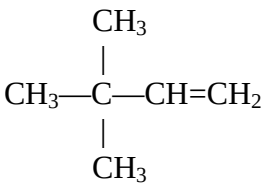
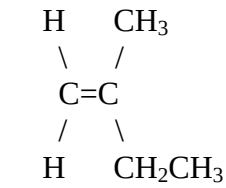
<td> 
3,3-Dimethyl-1-butene OR
3,3-Dimethylbut-1-ene</td>
<td> 
2-Methyl-1-butene OR
2-Methylbut-1-ene (no cis or trans)</td>
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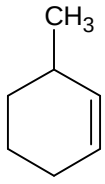
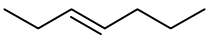
<td rowspan="2"> 
3-Methylcyclohexene</td>
<td> 
trans-3-heptene OR
trans-hept-3-ene</td>
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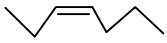
<td> 
cis-3-heptene OR
cis-hept-3-ene</td>
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