IUPAC RULES
(Part 2 - Alkenes)

Halogen substituents
-fluoro (-F); -chloro (-Cl); -bromo (-Br); -iodo (-I)

Common Alkene Fragments

<table>
<thead>
<tr>
<th>Structure of fragment</th>
<th>Common name</th>
<th>IUPAC name</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂C—</td>
<td>methylene</td>
<td>methylene</td>
</tr>
<tr>
<td>H₂C==CH—</td>
<td>vinyl</td>
<td>ethenyl</td>
</tr>
<tr>
<td>H₂C==CH₂—CH₂—</td>
<td>allyl</td>
<td>2-propenyl</td>
</tr>
<tr>
<td></td>
<td>phenyl</td>
<td>phenyl</td>
</tr>
</tbody>
</table>

Alkenes (Straight chain or ring)

1. Identify the longest continuous chain or ring with the largest number of double bonds
   (Use di-, tri-, tetra- etc. prefixes if needed)

2. Number the chain/ring starting at the end closest to the double bond
   (ring alkene is always C1-C2)

3. Name the substituents like in alkanes, with #s indicating location. Use R/S designation
   for any chiral carbons (note: the alkene is what determines the backbone numbering –
   substituent numbering must go along with the parent)

4. For geometric isomers, use trans/cis or E/Z designation. Ranking of groups attached to
   C=C is based on same priority as R/S (i.e. atomic #, isotopic weight, same tie-breaker
   rules)