

1. Draw the structure for each of the following compounds.

3-methylpent-1-ene

Cis-3-methyl-3-hexene

3,4-dibromobut-1-ene

1,3-cyclohexadiene

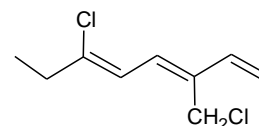
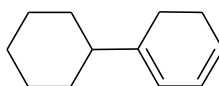
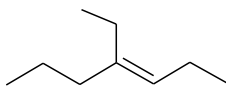
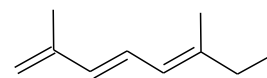
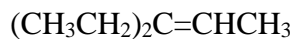
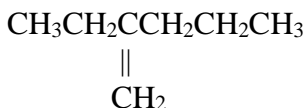
Cycloocta-1,4-diene

(*Z*)-3-methyl-2-octene

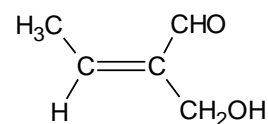
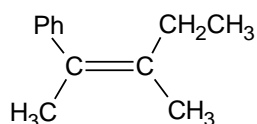
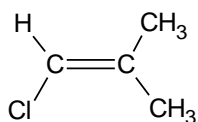
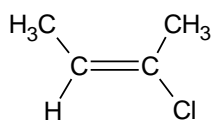
(*Z*)-2-bromo-2-pentene

(3*Z*, 6*E*)-1,3,6-octatriene

2. Give the correct name for each of the following compounds



3. Label the following structures as E or Z or neither.



8. Determine which compounds show cis-trans isomerism. Draw and label the isomers, using both the cis-trans and E-Z nomenclature where applicable.
- a) Pent-1-ene

 - b) Pent-2-ene

 - c) Hex-3-ene

 - d) 1,1-dibromopropene

 - e) 1,2-dibromopropene

 - f) 1-bromo-1-chlorohexa-1,3-diene
9. For each alkene, indicate the direction of dipole moment and in the pair determine the one with higher dipole moment.
- a) (Cis)-1,2-difluoroethene or trans-1,2-difluoroethene

 - b) (Cis)-1,2-dibromoethene or trans-1,2-dibromoethene

 - c) (Cis)-1,2-dibromoethene or cis-1,2-dichloroethene