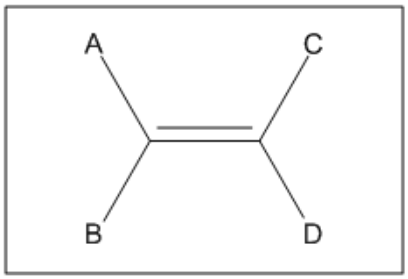
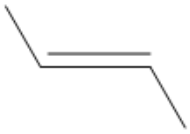
**CONCEPT:** DOUBLE BOND ISOMERISM

□ Cis and trans are names given to particular arrangements of double bonds or _____

- These isomers exist because free rotation around π bonds is _____
- When two groups are on the "same side of the fence", we call them _____
- When two groups are on "different sides of the "fence" we call them _____

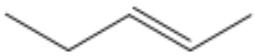
**EXAMPLE:** How are the different substituents related to each other?

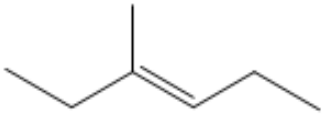


□ E and Z isomers are similar designations given to _____ alkenes

**EXAMPLE:** Assign cis/trans isomerism to the following alkenes





The E/Z naming system allows us to assign unique names to _____ and _____substituted alkenes.

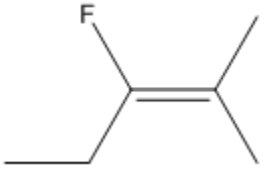
- Choose the highest priority groups on both corners of the double bond. How are they related to each other?

  - If _____, assign the letter (E)

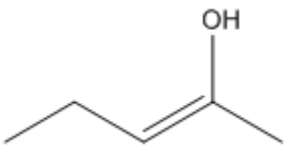
  - If _____, assign the letter (Z)

**EXAMPLE:** Assign an (E) - (Z) designation to the following alkenes if applicable.

a.

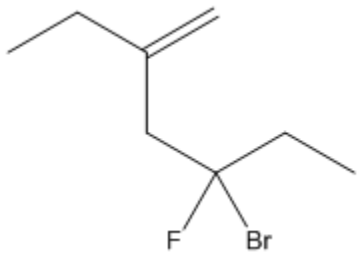



b.



**PRACTICE:** Determine the IUPAC names of the following molecules

a.




b.