

## CONCEPT: NOMENCLATURE OF HETEROCYCLES

- **Heterocycles** are cyclic compounds composed of \_\_\_\_ and 1 or more heteroatoms (\_\_\_\_).
- Saturated and \_\_\_\_ saturated heterocycles are named differently.

### Naming Saturated Heterocycles

- **Parent chain** is named as a \_\_\_\_ with a \_\_\_\_ to indicate the heteroatom.

- **Substituents** are assigned location numbers.

- Heteroatoms are given location \_\_\_\_.

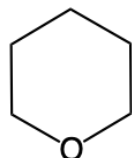
- Priority if more than one heteroatom: \_\_\_\_ > \_\_\_\_ > \_\_\_\_.

**MEMORY TOOL:** \_\_\_\_pen \_\_\_\_nacks \_\_\_\_ightly.

O: \_\_\_\_

S: \_\_\_\_

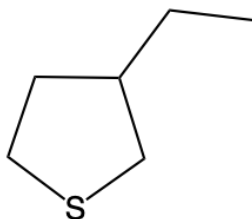
N: \_\_\_\_



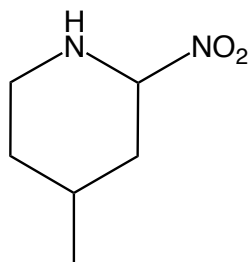
location-substituent-prefix-parent



**EXAMPLE:** Name the following saturated heterocycle.



**PRACTICE:** Provide the name for following structure.

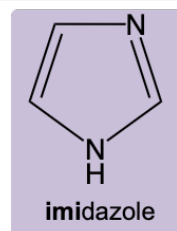
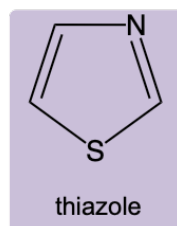
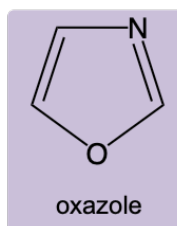
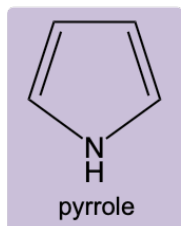
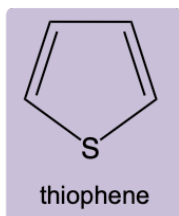
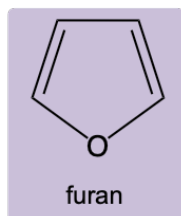


## CONCEPT: NOMENCLATURE OF HETEROCYCLES

### Naming Unsaturated Heterocycles

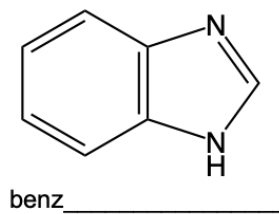
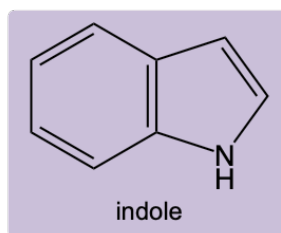
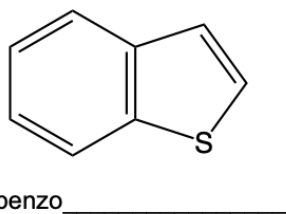
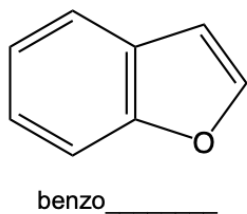
- Unsaturated heterocycles use \_\_\_\_\_ names for the \_\_\_\_\_ chain.

#### Common Names of Unsaturated Heterocycles

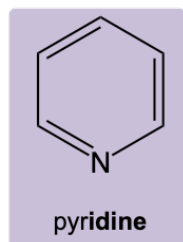


**MEMORY TOOL 1:** \_\_\_\_\_ ious \_\_\_\_\_ eves \_\_\_\_\_ atrol.

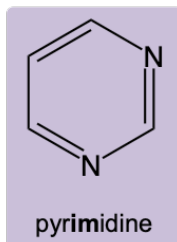
**HINT:** \_\_\_\_\_ (C=N)



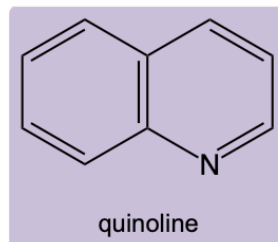
**MEMORY TOOL 2:** Pyrrole is \_\_\_\_\_ dole.



**HINT:** \_\_\_\_\_ means  
cyclic compound with N



**HINT:** imine (C=N)



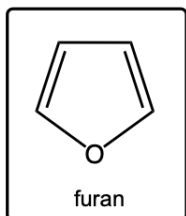
**MEMORY TOOL 3:** \_\_\_\_\_ ueen in  
\_\_\_\_\_ for \_\_\_\_\_ arade.

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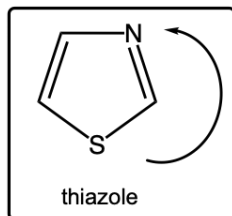
### Naming Substituted Unsaturated Heterocycles

- **Substituents** are assigned location numbers with some additional \_\_\_\_\_.

location-substituent-parent

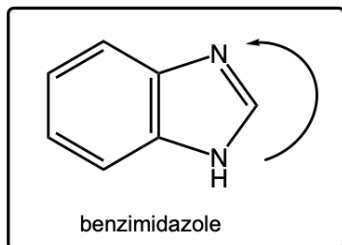


**RULE 1:** Heteroatom gets location \_\_\_\_, give substituent \_\_\_\_\_ possible number.



**RULE 2:** Higher priority heteroatom gets location \_\_\_\_.

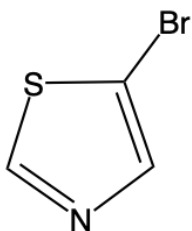
- ☐ Second heteroatom gets \_\_\_\_\_ lowest number.
- ☐ If more than 1 N present, start with \_\_\_\_\_ N.



**RULE 3:** In bicyclic molecules Cs at ring junctions are \_\_\_\_\_ numbered.

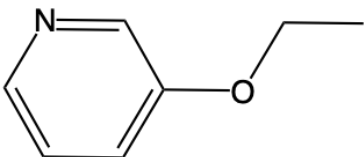
- ☐ Heteroatom gets location \_\_\_\_.

**EXAMPLE:** Name the following heterocyclic molecule.



**CONCEPT: NOMENCLATURE OF HETEROCYCLES**

**PRACTICE:** Provide name of given molecule.



**PRACTICE:** Provide structure for benzimidazole-6-carboxylic acid.

**PRACTICE:** Provide structure for *N*-propylindole.