

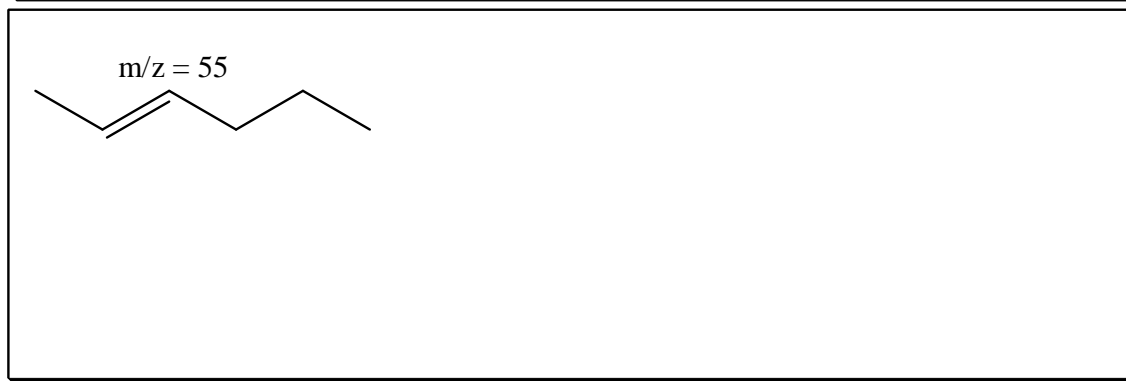
Problem Set 10
S343 Summer 2009

Smith Text chapter 13: Problems 1-4, 19, 21, 25, 26, 34, 36

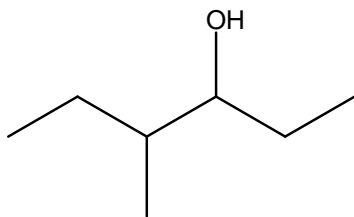
Techniques in Organic Chemistry: Technique 20, problems 2, 3, 4, 6, 8

Additional problems:

1. Explain why there is a small peak at $m/z=32$ for the compound CH_3NH_2 .
2. What do the following abbreviations stand for?
 - a. EI
 - b. CI
 - c. FAB
3. Use the rule of 13 to come up with 3 likely formulas that fit $M^+ = 128$.
4. Provide mechanisms to account for the fragments seen in the mass spectrum of these compounds.



5. Give the m/z values of two major fragments you would expect to see in the mass spectrum of the following compound. Mark the one that is most likely to show up as the base peak, and explain.



$m/z =$

$m/z =$

6. What two circumstances lead to fragments with even m/z values?
7. Give three important pieces of information about the molecular formula of the compound (other than the molecular weight) that you can obtain from this mass spec data.

m/z	Relative abundance
34	21
52	35
91	100
102	22
111 (M^+)	10
113	3.3