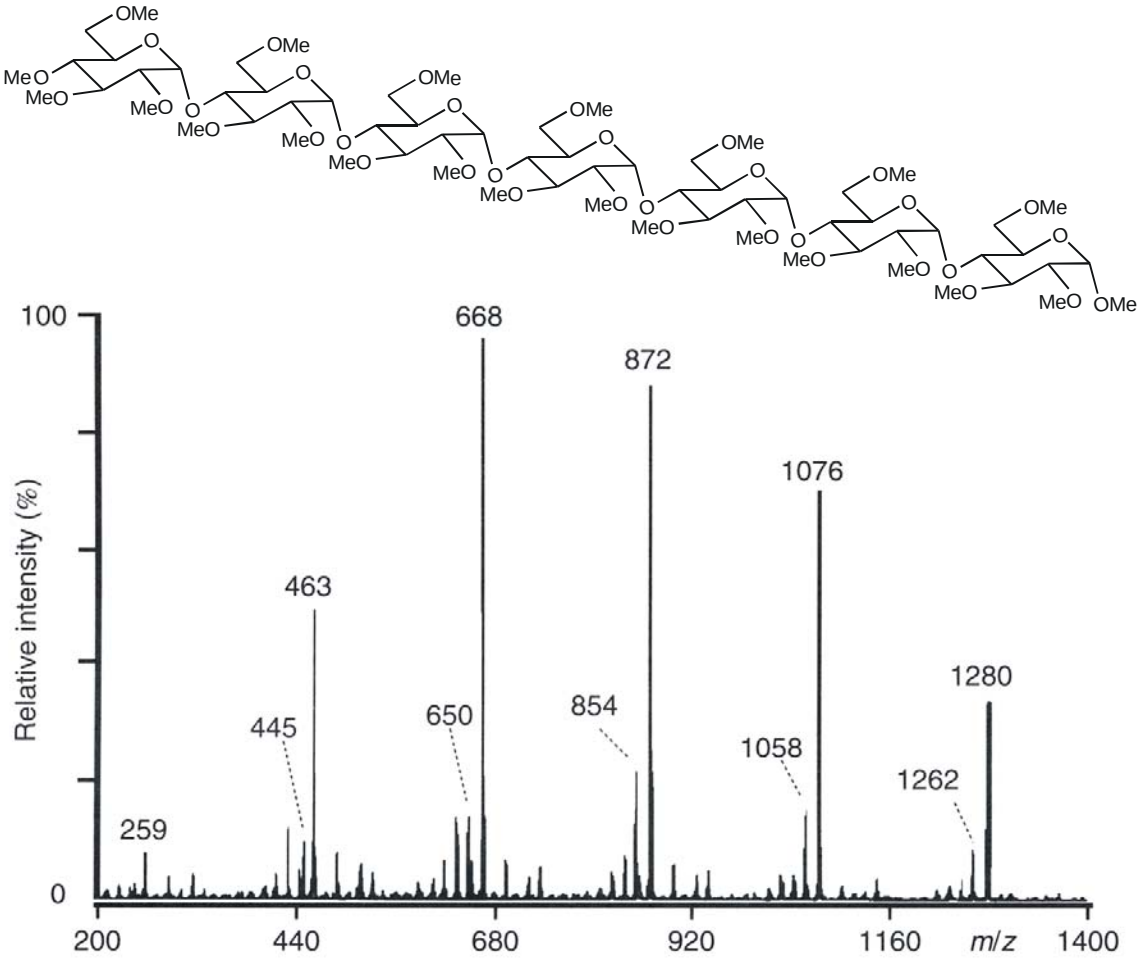
Chemistry 4361/8361 Wednesday, November 28

In-Class Exercise:
Collision-Induced Dissociation with Even-Electron Ions

The collision-induced dissociation ESI-MS/MS of a methylated maltoheptulose (MW = 1475.4) is shown below.



To obtain this spectrum, the doubly charged, double-sodium adduct ($[M \cdot 2Na]^{2+}$, m/z = 760.7) was selected and subjected to CID, yielding the mass spectrum above. Similar to peptides, ionized oligosaccharides can also cleave to yield "b" and "y" ions.

a. Initially, let's focus on the m/z = 1280 and 1262 ions. What masses are lost from the parent to generate these ions?

b. What fragments are responsible for these peaks in the MS/MS?

c. How do you explain the other peaks in the spectrum?