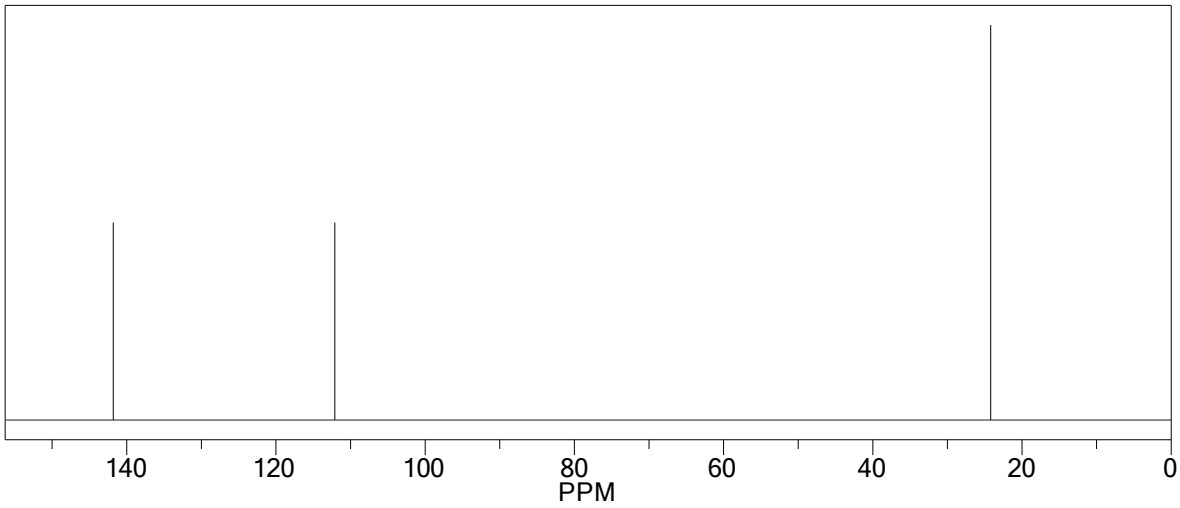
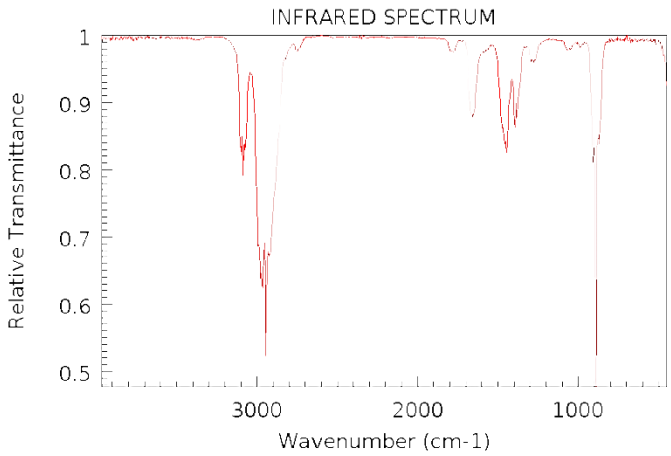
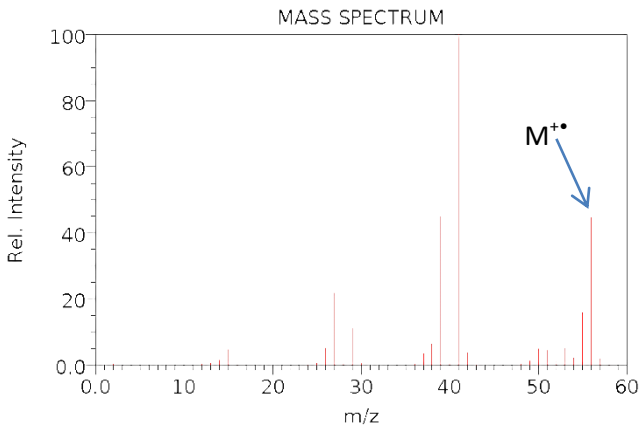
Chemistry 3.2 **Worksheet 7** Name _____

Below are the spectra-data for Compound G







From the MS, the molecular mass is estimated to 56, on top of that a strong peak of 41, a 15 m/z different. This often indicates methyl (CH_3) branch group.

Both ^{13}C NMR and IR indicate the present of C=C

^{13}C NMR	~142 ppm and 112 ppm
IR	~1600 cm^{-1}

^{13}C NMR has two peaks in the C=C zone means the C=C is not in the center of a symmetrical molecule

Mass of 56 indicate a molecular of C_4H_8

2-methyl prop-1-ene has 3 carbon environments
But-1-ene has 4 carbon environments
But-2-ene has 2 carbon enviornments

Since the ^{13}C NMR indicate only 3 carbon environments, therefore the structure is 2-methyl prop-1-ene