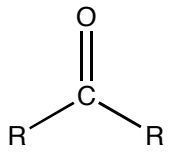
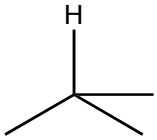
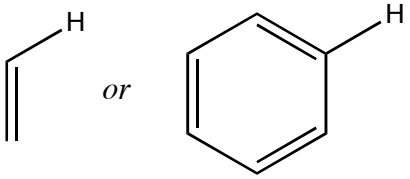
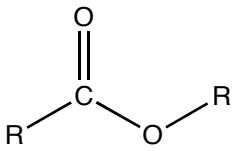
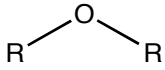
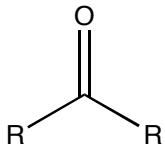
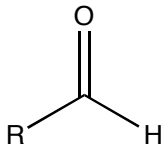
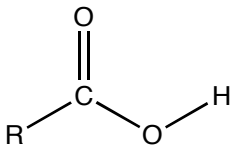
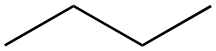
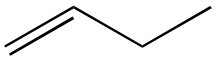
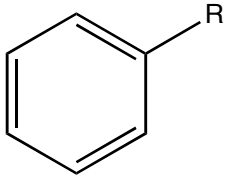
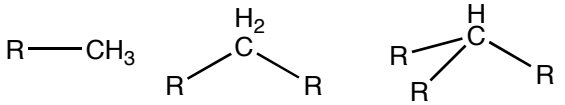
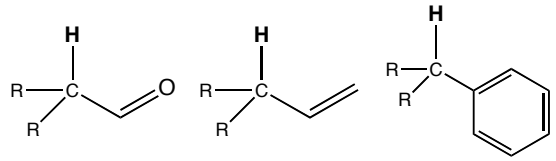
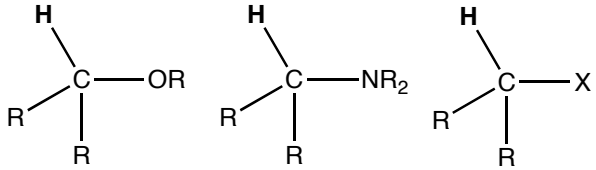
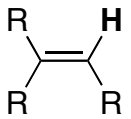
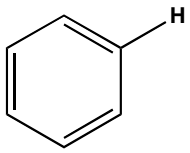
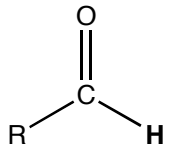
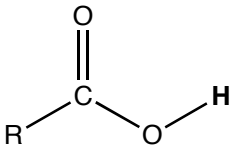
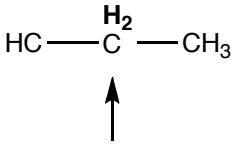
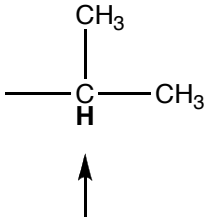
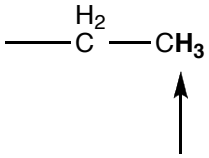
Approximate IR absorption area for a carbonyl group: 	Absorption in the IR spectrum at ~1700 cm^{-1}
Approximate IR absorption area for a hydroxyl group: 	Absorption in the IR spectrum at ~3500 cm^{-1}
Approximate IR absorption area for saturated CHs: 	Absorption in the IR spectrum at <3000 cm^{-1}
Approximate IR absorption area for unsaturated CHs: 	Absorption in the IR spectrum at >3000 cm^{-1}
Approximate IR absorption area for a CO single bond: 	Absorption in the IR spectrum at ~1000 – 1250 cm^{-1}

Expected IR absorptions for an ester molecule: 	Class of molecule has IR absorptions at: ~1700 cm^{-1} ~1000 – 1250 cm^{-1} (plus saturated and/or unsaturated CH)
Expected IR absorptions for an alcohol molecule: 	Class of molecule has IR absorptions at: ~3500 cm^{-1} ~1000 – 1250 cm^{-1} (plus saturated and/or unsaturated CH)
Expected IR absorptions for an ether molecule: 	Class of molecule has IR absorptions at: ~1000 – 1250 cm^{-1} (plus saturated and/or unsaturated CH)
Expected IR absorptions for a ketone molecule: 	Class of molecule has IR absorptions at: ~1700 cm^{-1} (plus saturated and/or unsaturated CH)
Expected IR absorptions for an aldehyde molecule: 	Class of molecule has IR absorptions at: ~1700 cm^{-1} (plus saturated and/or unsaturated CH)

Expected IR absorptions for a carboxylic acid molecule:  	Class of molecule has IR absorptions at: Very broad absorption at ~3000cm^{-1} ~1700 cm^{-1} ~1000 – 1250 cm^{-1} (plus saturated and/or unsaturated CH)
Expected IR absorptions for an alkane molecule: 	Class of molecule has IR absorptions at: <3000 cm^{-1}
Expected IR absorptions for an alkene molecule: 	Class of molecule has IR absorptions at: >3000 cm^{-1} (often saturated CH too)
Expected IR absorptions for an aromatic molecule:  	Class of molecule has IR absorptions at: >3000 cm^{-1} (often saturated CH too)

Approximate ^{1}H NMR chemical shift area for a simple saturated C–H:  methyl methylene methine	The type of C–H that appears in the 0 – 1.5 PPM range in the ^{1}H NMR spectrum
Approximate ^{1}H NMR chemical shift area for:  alpha to a carbonyl allylic benzylic	The types of C–H that appear in the 1.5 – 2.5 PPM range in the ^{1}H NMR spectrum
Approximate ^{1}H NMR chemical shift area for: 	The types of C–H that appear in the 2.5 – 4.5 PPM range in the ^{1}H NMR spectrum
Approximate ^{1}H NMR chemical shift area for:  vinyl H	The type of C–H that appears in the 4.5 – 6.5 PPM range in the ^{1}H NMR spectrum
Approximate ^{1}H NMR chemical shift area for:  benzene CH (aromatic CH)	The type of C–H that appears in the 6.5 – 8.5 PPM range in the ^{1}H NMR spectrum

Approximate ^{1}H NMR chemical shift area for:  aldehyde	The type of C–H that appears in the 9 – 10 PPM range in the ^{1}H NMR spectrum
Approximate ^{1}H NMR chemical shift area for:  carboxylic acid	The type of C–H that appears in the 10 – 12 PPM range in the ^{1}H NMR spectrum
What is the multiplicity of the following set of protons? 	How many neighbors would a methylene group have that is a **pentent** in the ^{1}H NMR spectrum?
What is the multiplicity of the following set of protons? 	How many neighbors would a methine group have that is a **heptet** in the ^{1}H NMR spectrum?
What is the multiplicity of the following set of protons? 	How many neighbors would a methyl group have that is a **triplet** in the ^{1}H NMR spectrum?