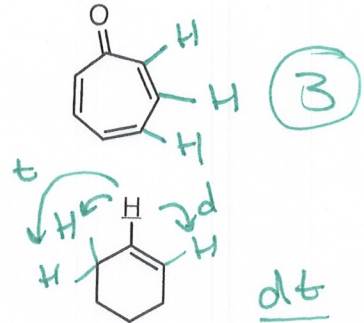


Name:

Signature

The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

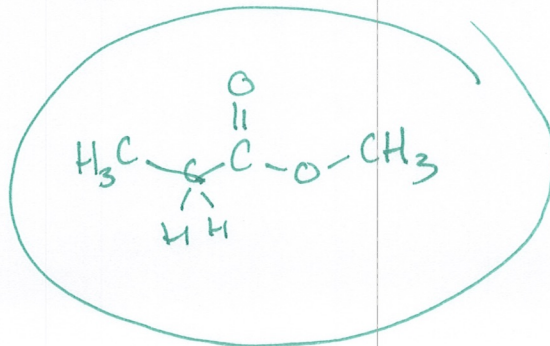
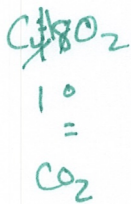
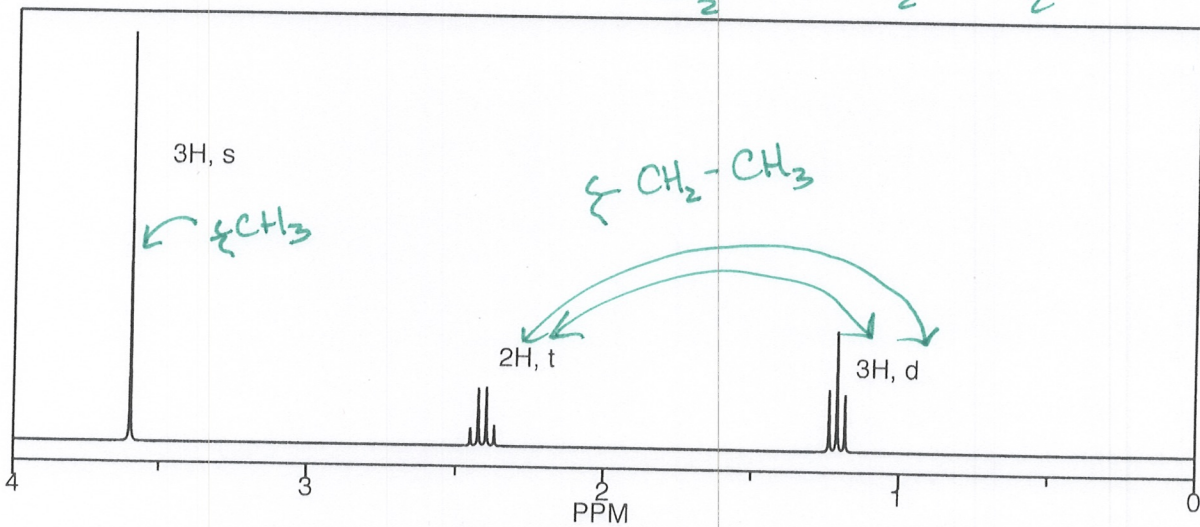
1. How many sets of 'chemically equivalent protons' exist in the following molecule. Draw in 1 proton corresponding to each set. (5 points)



2. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points)

3. Draw a structure with the formula C<sub>4</sub>H<sub>8</sub>O<sub>2</sub> consistent with the following NMR spectra. (10 points)

$$\frac{2(\text{H}) + 2 - 8}{2} = \frac{8 + 2 - 8}{2} = \frac{2}{2} = 1$$



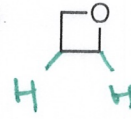
Name:

Signature

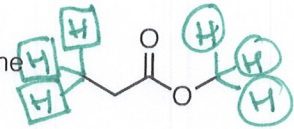
The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

1. How many sets of 'chemically equivalent protons' exist in the following molecule. Draw in 1 proton corresponding to each set. (5 points)

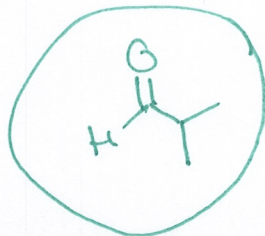
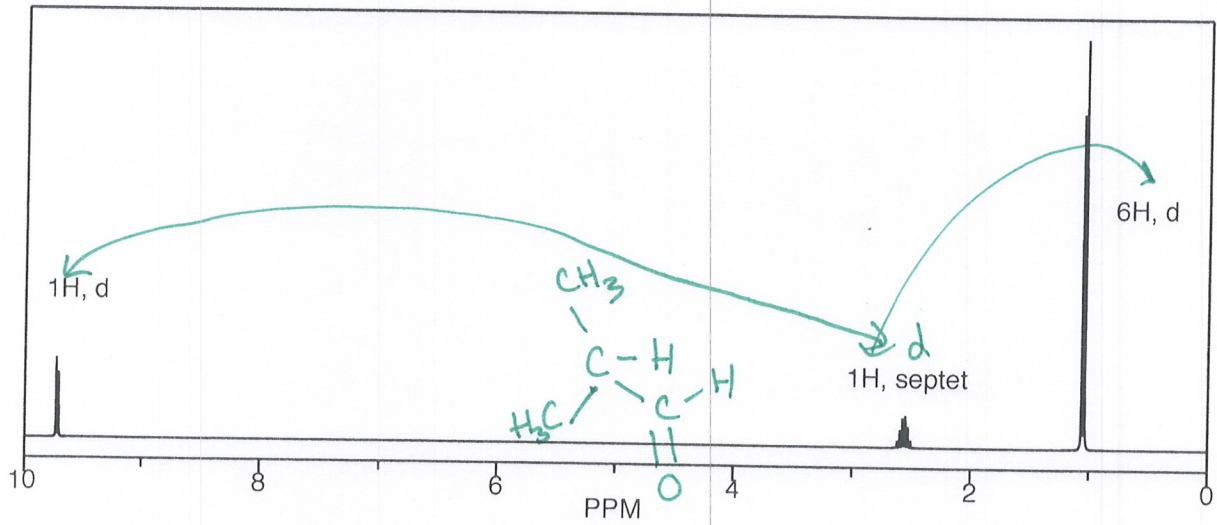
2



2. Draw and circle the proton(s) that would be the most downfield (ie, furthest left on NMR spectra, biggest ppm). Then draw and put a square around the proton(s) that would be the most upfield (ie, furthest right on NMR spectra, smallest ppm) (5 points)



3. Draw a structure with the formula  $C_4H_8O$  consistent with the following NMR spectra. (10 points)



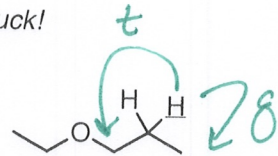


Name:

Signature

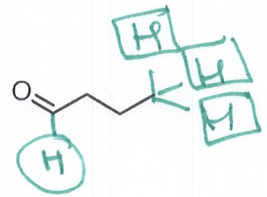
The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

1. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points) (5 points)



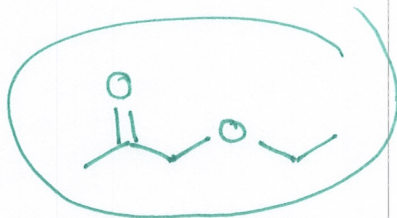
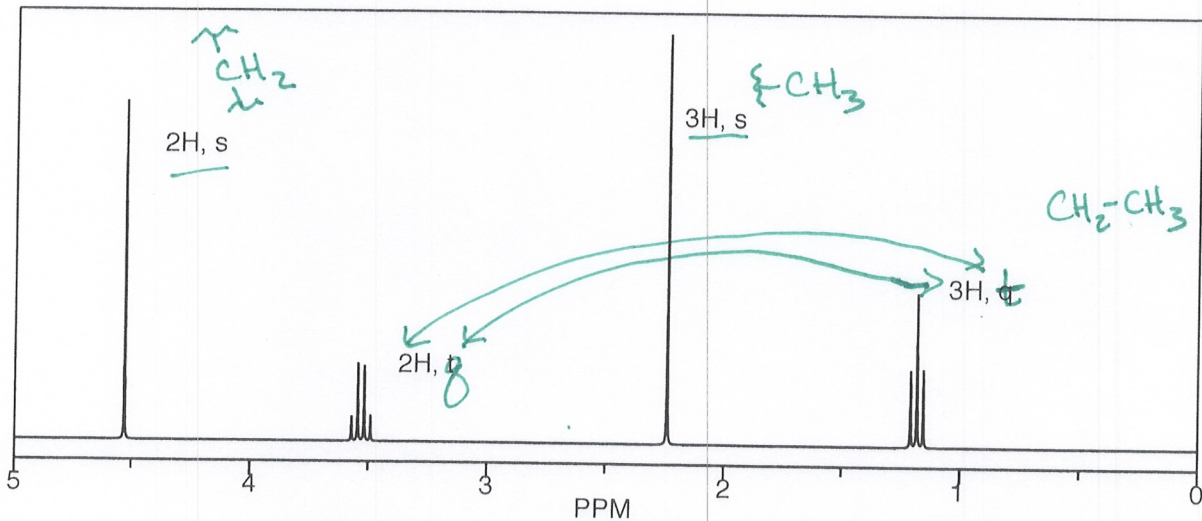
tq

2. Draw and circle the proton(s) that would be the most downfield (ie, furthest left on NMR spectra, biggest ppm). Then draw and put a square around the proton(s) that would be the most upfield (ie, furthest right on NMR spectra, smallest ppm) (5 points)



3. Draw a structure with the formula  $C_7H_{10}O_2$  consistent with the following NMR spectra. (10 points)

CO<sub>2</sub>

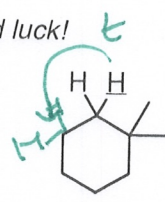


Name:

Signature

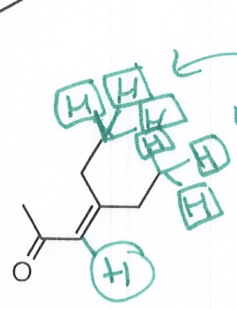
The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

1. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points) (5 points)



t

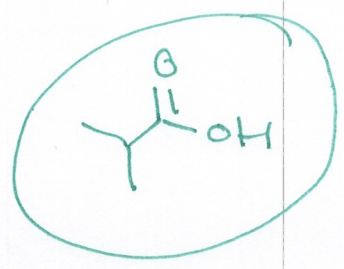
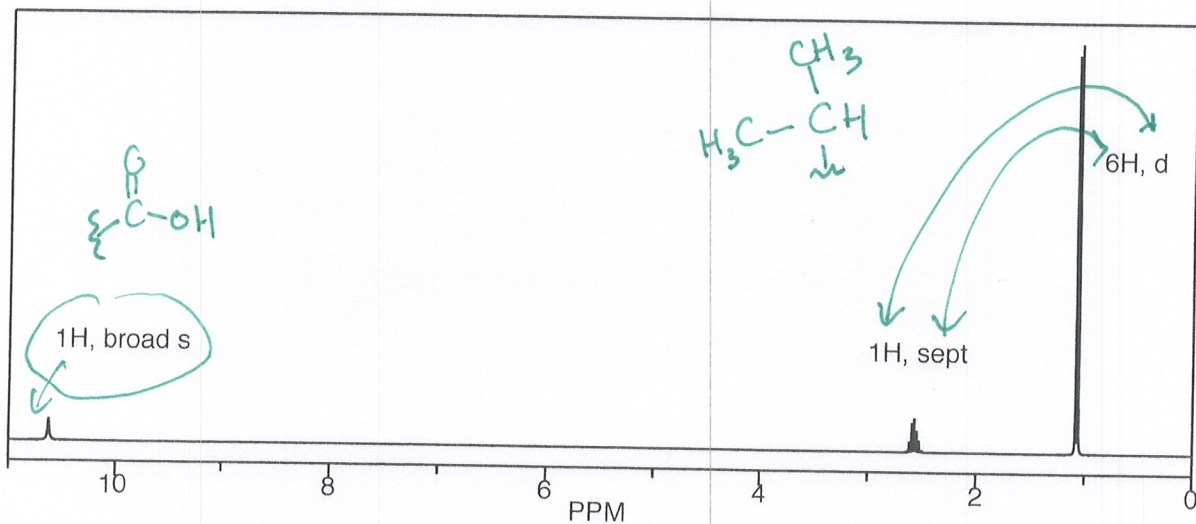
2. Draw and circle the proton(s) that would be the most downfield (ie, furthest left on NMR spectra, biggest ppm). Then draw and put a square around the proton(s) that would be the most upfield (ie, furthest right on NMR spectra, smallest ppm) (5 points)



would accept either or both sets.  
Technically not equivalent

3. Draw a structure with the formula  $C_4H_8O_2$  consistent with the following NMR spectra. (10 points)

1 1 1 0 0 0



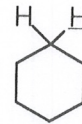


Name:

Signature

The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

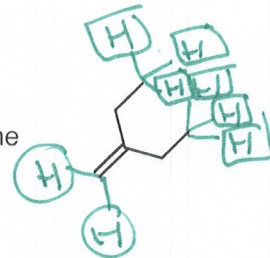
1. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points) (5 points)



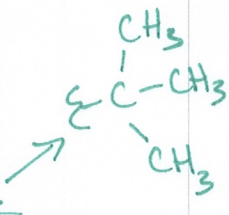
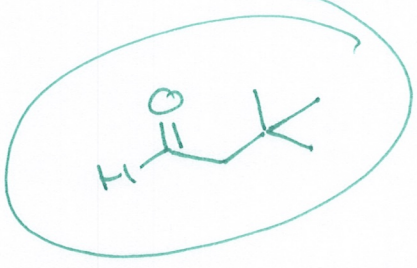
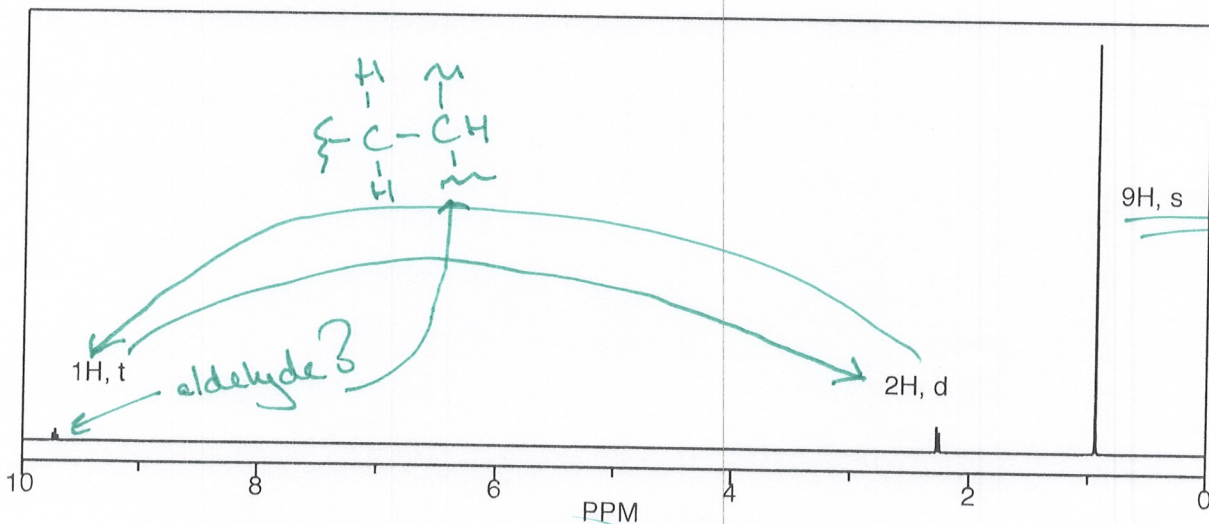
all protons are equivalent

s

2. Draw and circle the proton(s) that would be the most downfield (ie, furthest left on NMR spectra, biggest ppm). Then draw and put a square around the proton(s) that would be the most upfield (ie, furthest right on NMR spectra, smallest ppm) (5 points)



3. Draw a structure with the formula  $C_5H_{12}O$  consistent with the following NMR spectra. (10 points)

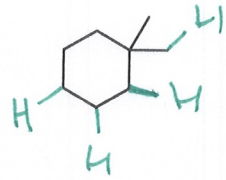


Name:

Signature

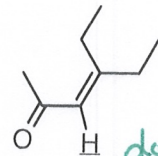
The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

1. How many sets of 'chemically equivalent protons' exist in the following molecule. Draw in 1 proton corresponding to each set. (5 points)



4

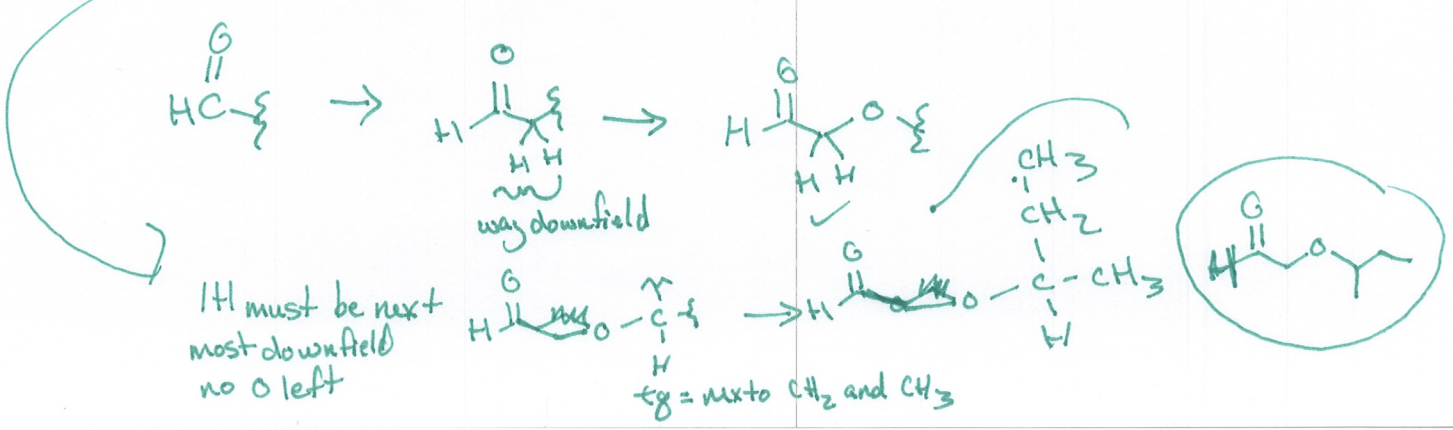
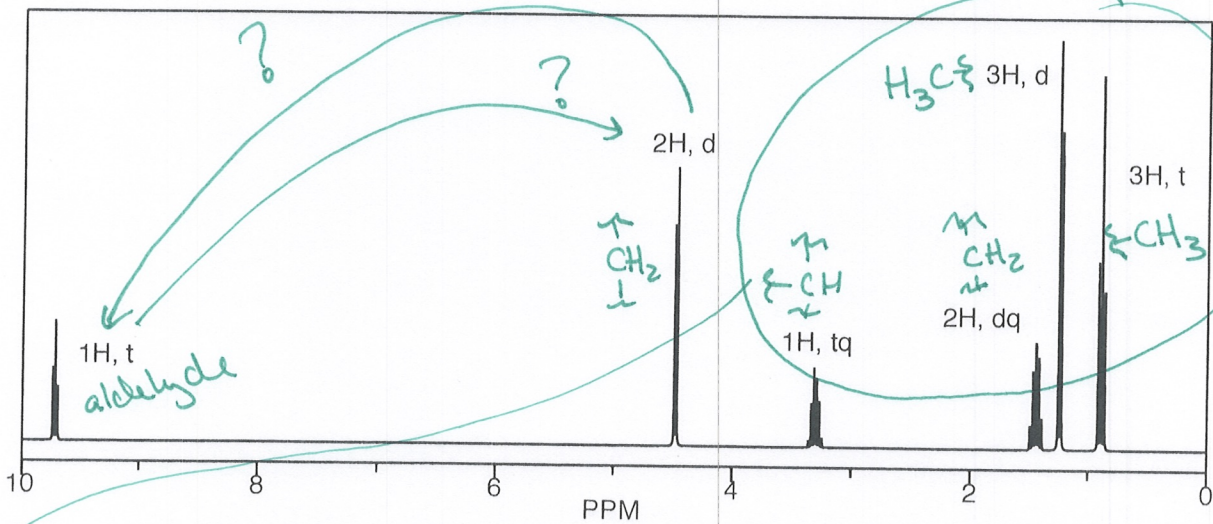
2. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points)



doesn't have vicinal or geminal protons

s

3. Draw a structure with the formula  $C_6H_{12}O_2$  consistent with the following NMR spectra. (10 points)





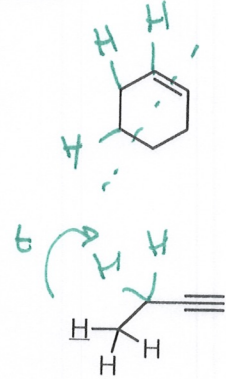
Name:

Signature

The following quiz will start 5 minutes into class and last 30 minutes. Good luck!

1. How many sets of 'chemically equivalent protons' exist in the following molecule. Draw in **1** proton corresponding to each set. (5 points)

3



2. What would be the expected splitting pattern (ie, s, d, t, q, etc.) for the underlined proton. (5 points)

t

3. Draw a structure with the formula  $C_4H_6O$  consistent with the following NMR spectra. (10 points)

$$\frac{2+8-6}{2} = 2$$

