Review Questions for Unit 2
Chem 1010

1. Describe what is going on with water molecules in each state of matter.

	physical characteristics	spacing	movement	organization
solid				
liquid				
gas				

2. What state of matter does a substance start in and end in during each of these changes? Give an example of each.

freezing

melting

evaporating or boiling

condensing

subliming

deposition

3. What state of matter will the following things be in at the temperature where water freezes and boils?

	melting point	boiling point	state of matter where water freezes	state of matter where water boils
water	0°C	100°C	x	x
propane	-187°C	-42°C		
methyl salicylate	-9°C	220°C		
ethanol	-114°C	78°C		
vanillin	80°C	285°C		

4. Describe the characteristics of chemical, physical, and nuclear changes, and give an example of each.

	what changes	what stays the same	example
physical changes			
chemical reactions			
nuclear reactions			

5. Balance the following equation, making a chart to show how you arrived at the answer.

2 C_2H_2 + $O_2 \rightarrow$ CO_2 + H_2O

Reactants	Products

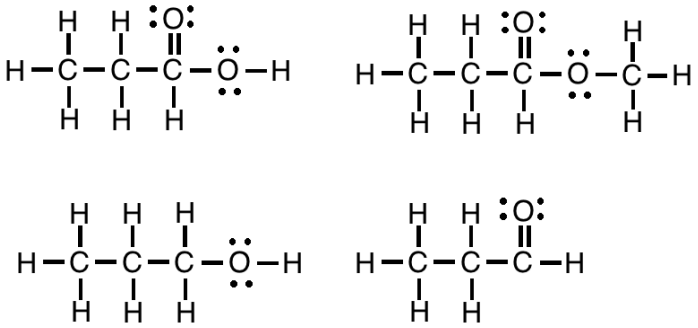
6. Give Lewis structures for the following compounds, starting by drawing the Lewis structures for all of the atoms. For b) and c), also draw the Lewis structure of an isomer of that compound.

a) CH_3Cl

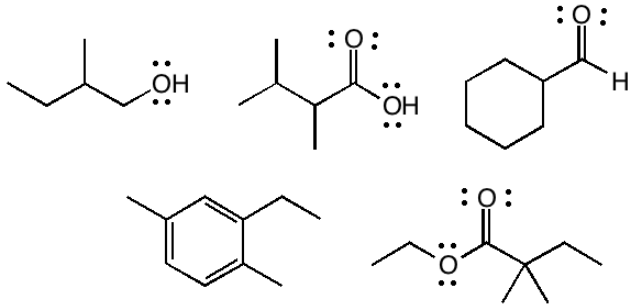
b) CH_4NCl

c) C_2H_4O

7. Identify the alcohol, carboxylic acid, ester, and aldehyde in the compounds below.

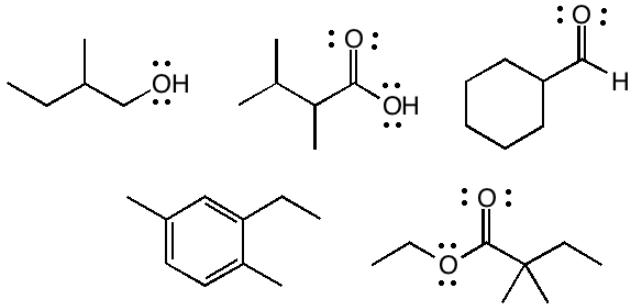


8. Give the number of carbon atoms in each of the line structures below.



9. Identify the following in the line structures below.

a) hydrocarbon
b) aromatic compound
c) alcohol
d) carboxylic acid
e) ester
f) aldehyde



10. Give the name and formula of a compound found in each of the following.

78% of earth's atmosphere	
alcoholic drinks	
ant bites	
antifreeze	
bananas	
barbeque grills	
21% of earth's atmosphere	
cinnamon	
cutting and welding torches	
dry ice	
floor and window cleaners	
fruit hormone that causes ripening	
lemons	
lighters	
natural gas	
race car fuel	
rubbing alcohol	
stomach acid	
used in embalming	
vanilla	
vinegar	
wintergreen	