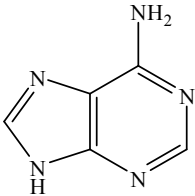
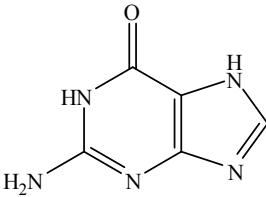
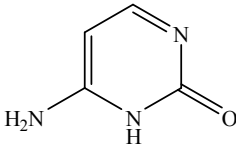
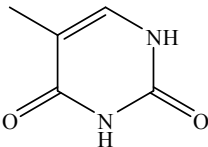
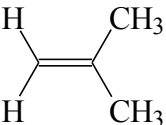
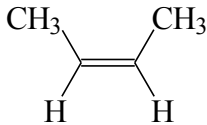
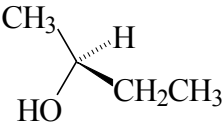
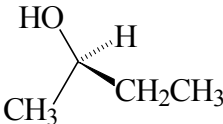
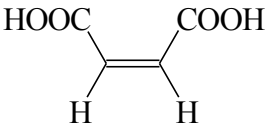
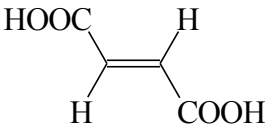


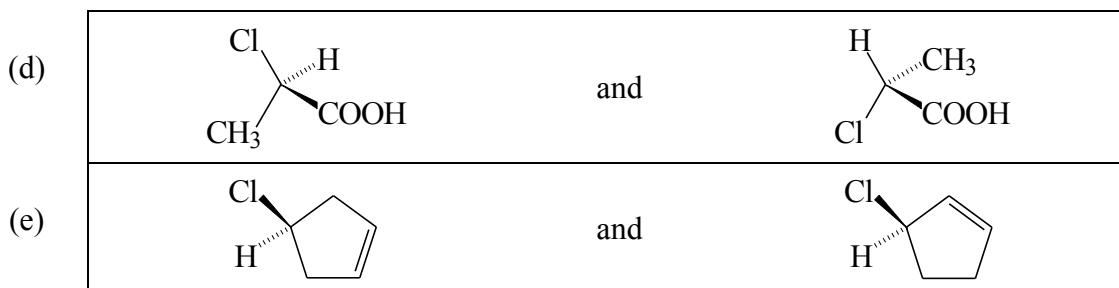
Work through the ChemCAL module "*Structural Organic Chemistry*".

1. The compounds shown below are capable of tautomerism. Give the constitutional formula of *at least* one other tautomer for each compound.

Compound	Tautomer
	
	
	
	

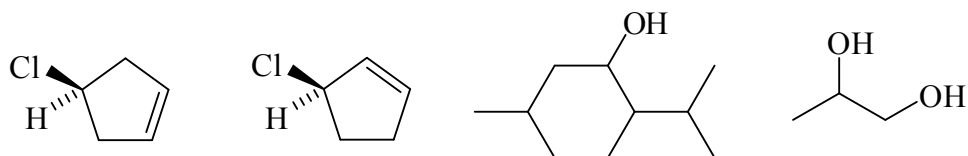
2. Consider the following pairs of compounds:

(a)		and	
(b)		and	
(c)		and	

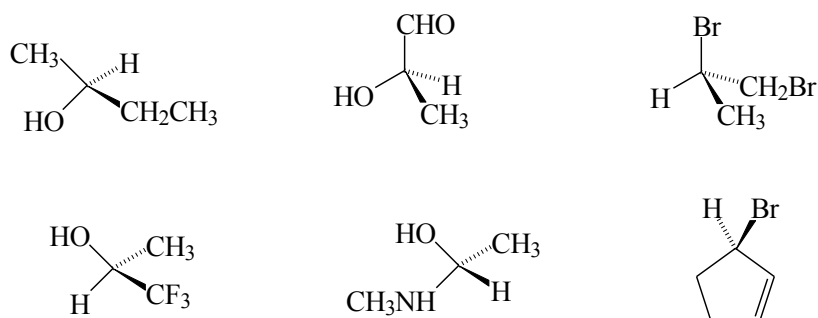


- (a) Which pair (or pairs) are constitutional isomers?  
 (b) Which pair (or pairs) are diastereoisomers?  
 (c) Which pair (or pairs) are enantiomers?  
 (d) Which pair (or pairs) are (*E*)- / (*Z*)-isomers?

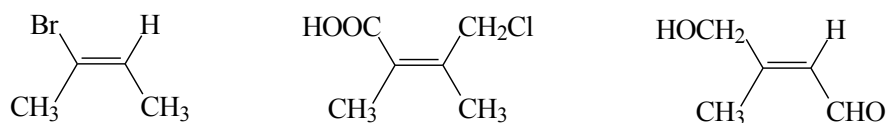
3. Mark each stereogenic centre in the following compounds with an asterisk (\*).



4. Assign absolute configurations (*R*, *S* nomenclature) to the following molecules.



5. Assign stereochemical descriptors (*E*, *Z* nomenclature) to the following alkenes.



6. 1-Butene,  $\text{CH}_2=\text{CHCH}_2\text{CH}_3$ , is treated with bromine in carbon tetrachloride solvent to give compound **F**.

- (a) What is the structure of **F**?  
 (b) Is **F** obtained as the (*R*), the (*S*)-enantiomer or as a racemic mixture?  
 (c) Complete the stereoformula for the (*R*)-enantiomer of compound (**F**):

