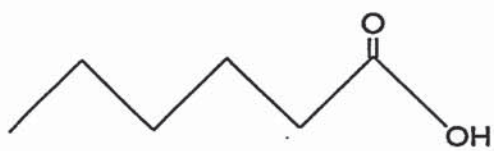


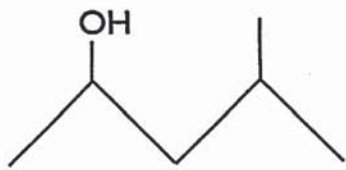
1. Name the following 3 compounds



hexanoic acid



2,5 di-methyl hexane



4-methylpentan-2-ol

or 4-methyl-2-pentanol

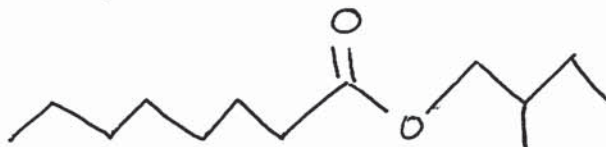
**4-methyl-2-pentanol**

9. Draw the following

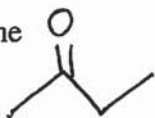
3 methyl hexanal



2 methyl-butyl octanoate



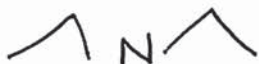
2 butanone



3 methyl 2 pentene



ethyl ethyl amine



methyl butyl ether

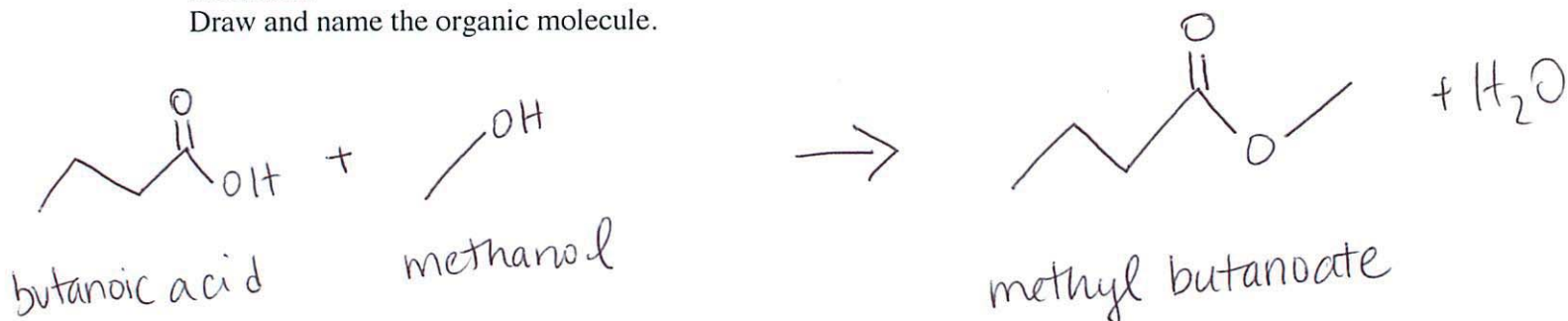


2,3 dimethyl dodecane



10. What products would you predict form from a condensation reaction of butanoic acid and methanol?

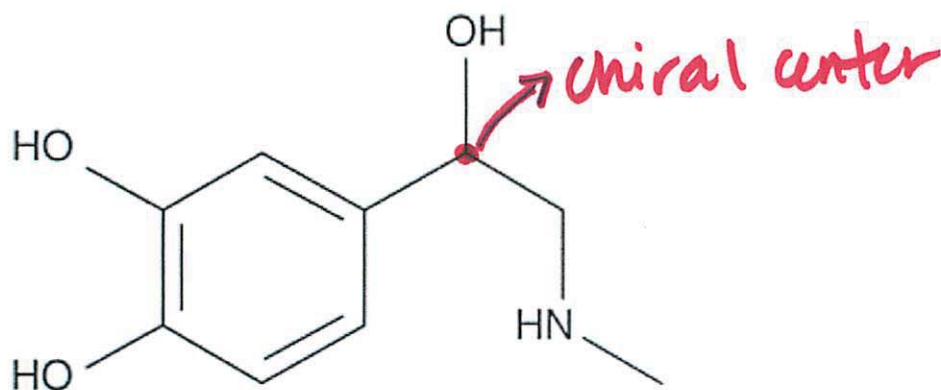
Draw and name the organic molecule.



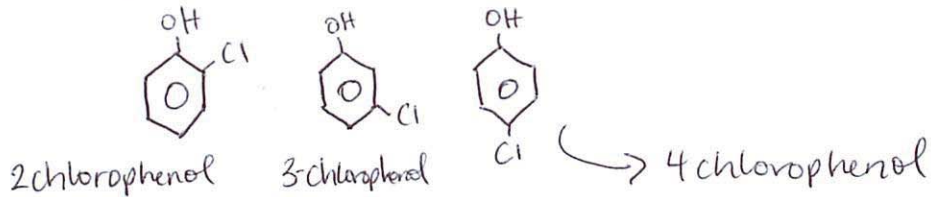
11. How many geometric isomers are there for chloro pentane? Name them all. (assume an unbranched pentane chain and ignore any stereo isomers).

Three  
chloropentane  
2-chloropentane  
3-chloropentane

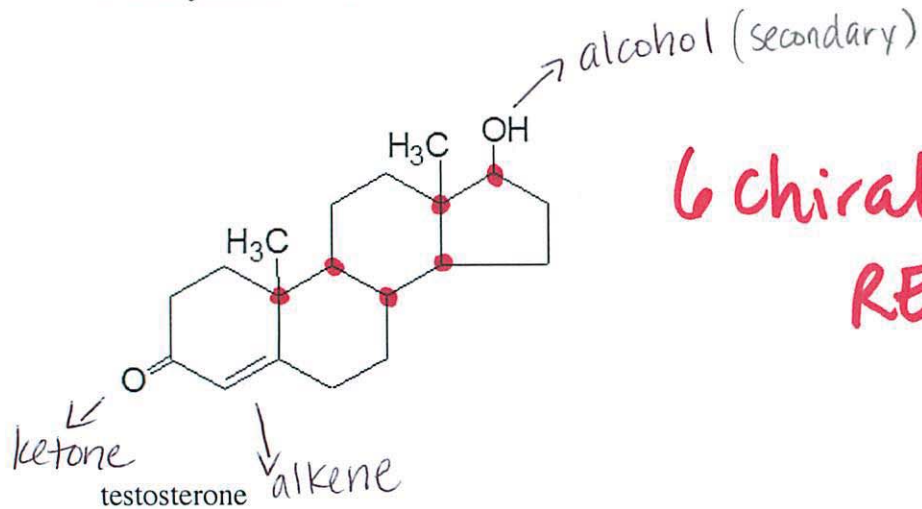
12. Does this molecule (epinephrine/adrenaline) have any chiral centers? If so, clearly mark the chiral center(s) with an arrow at the central atom.



How many isomers are there for chloro-phenol? Draw them. *Three*

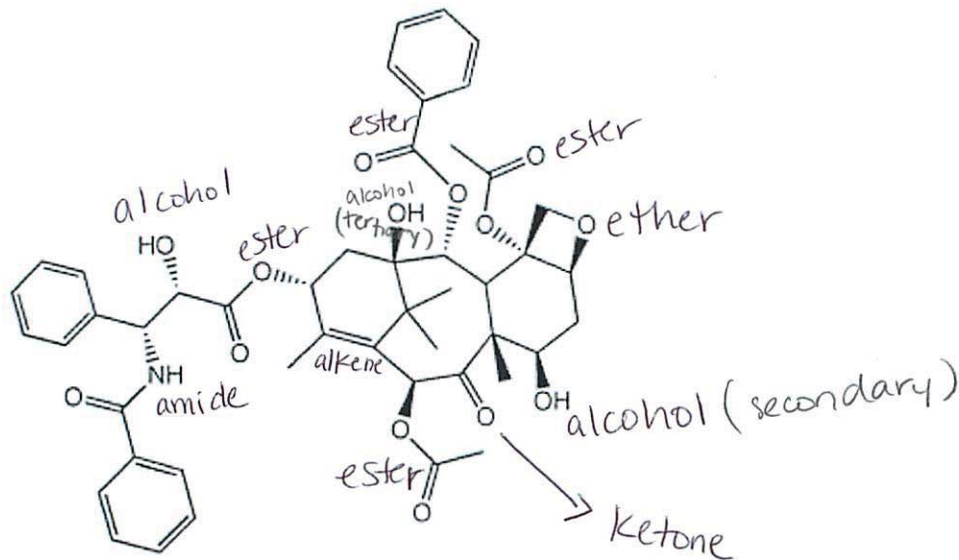


For the following molecules point out all the functional groups and label what they are along with any chiral centers



**6 chiral centers in RED**

For this one, but label the functional groups



Taxol