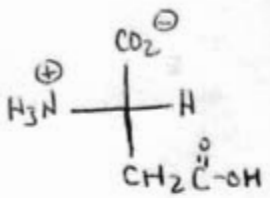
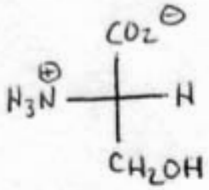
Sample Problems for chapter 23and 27. These are good practice problems for exam #3. (note, for the exam figure 23.1 on page 960-961 will be available to you so you do not need to memorize all the amino acids)

1 Draw in the zwitterions forms and the depict the stereochemistry (use Fisher projections) of the α carbon of the following amino acids:

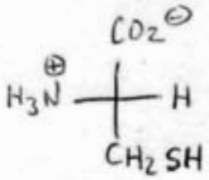
Aspartic acid



Serine



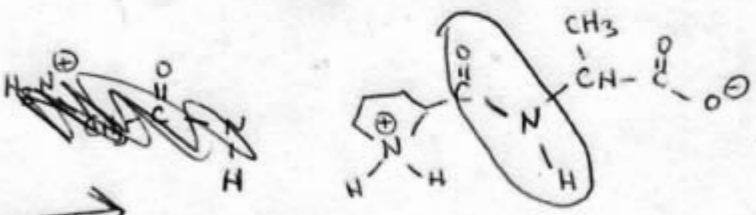
Cysteine



2. Draw the structures of the following peptides and note which is the 'N terminal residue' and 'C terminal residue'. Also circle the 'peptide bond' and draw it in the correct configuration (either 'cis' or 'trans')

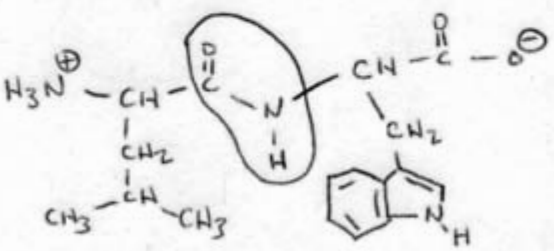
all trans forms

Pro Ala



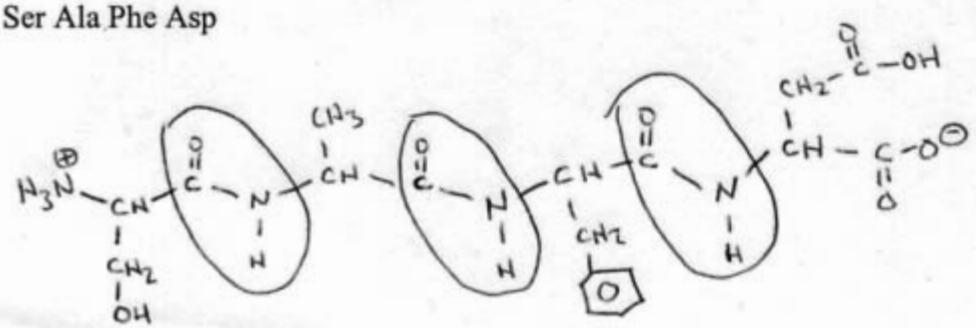
C Terminus

Leu Trp

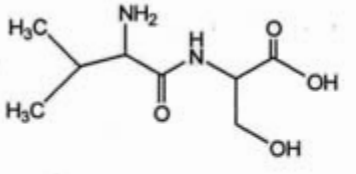


'N terminus'

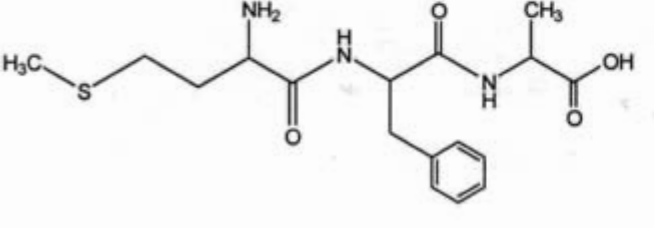
Ser Ala Phe Asp



3. Name the peptides below by their 3 lettered abbreviated amino acid notation (as in question #2 above)

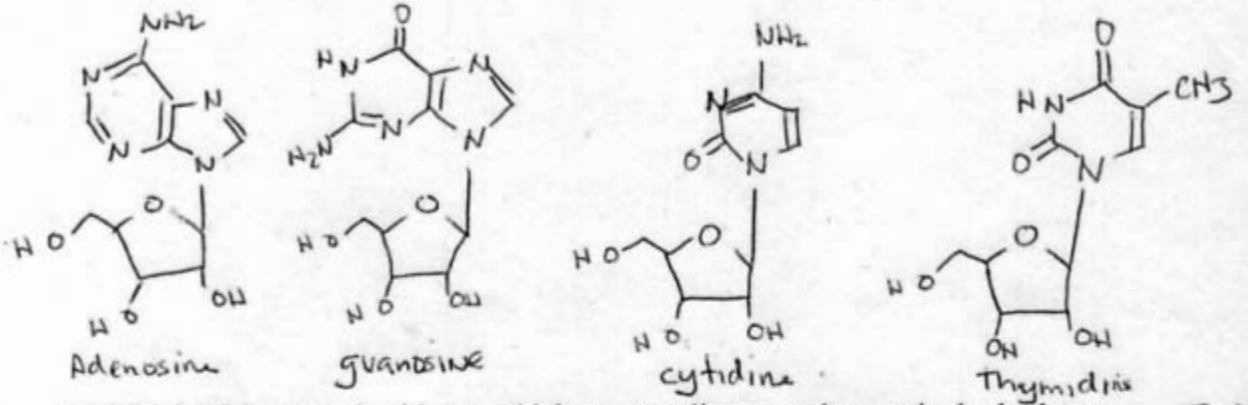


Val-Ser



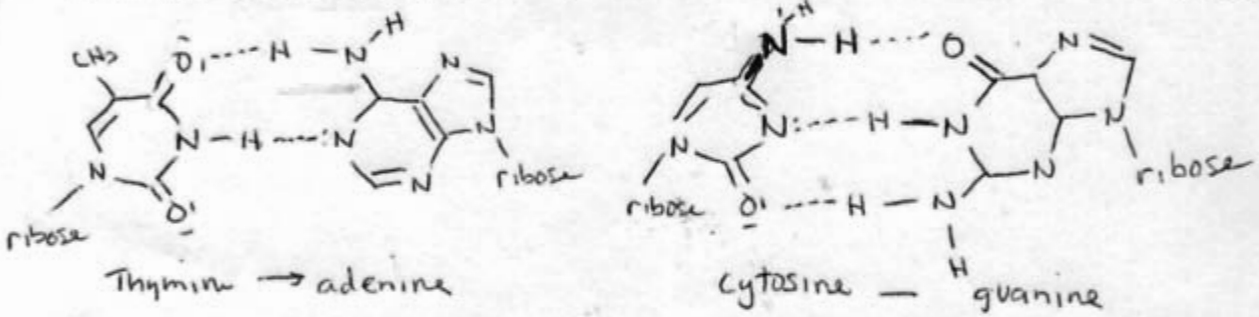
met-phe-Ala

6. Draw the nucleosides adenosine guanosine, thymidine and cytodine. Also, draw guanosine in the 'enol' form (this is not the form it naturally takes).



b) Which of these nuclestides would form complimentary base pairs by hydrogen bonding? Depict the hydrogen bonding that occurs between each base pair.

T → A
C → G



c) Which nucleoside(s) listed above could form a successful base pair with the nucleoside below? Draw the hydrogen bonding interaction that would occur.