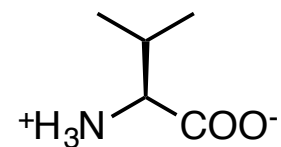
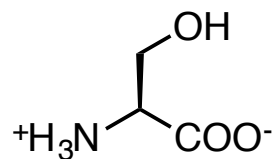


GT



If this card does not show  
the GT logo on the reverse side,  
then all the cards are incorrect.  
Change the print parameters  
and reprint them.  
Constructed by  
Loren Williams and Nick Hud

Serine  
Ser  
S

Valine  
Val  
V

7

8

Cysteine  
Cys  
C

Isoleucine  
Ile  
I

Alanine  
Ala  
A

4

5

6

Threonine  
Thr  
T

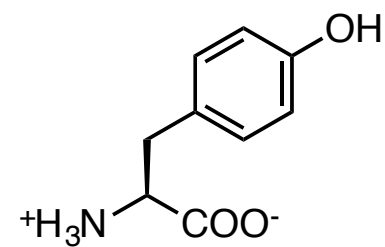
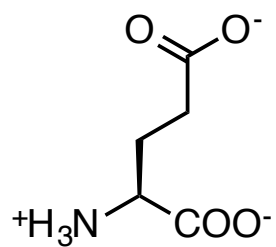
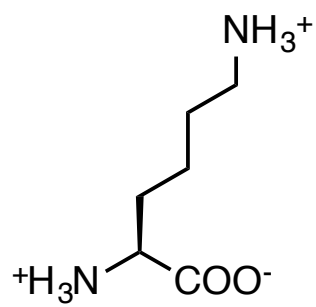
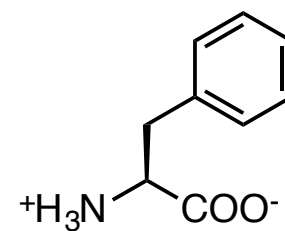
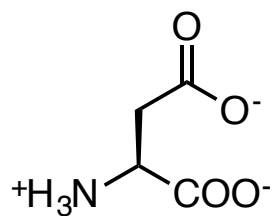
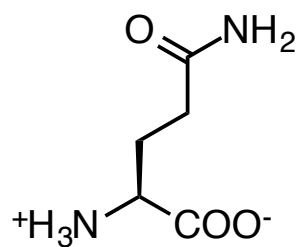
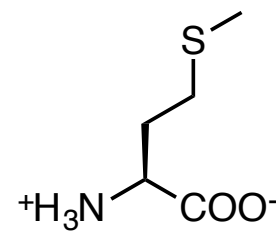
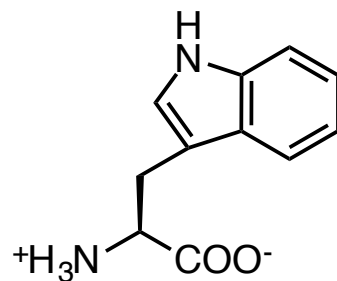
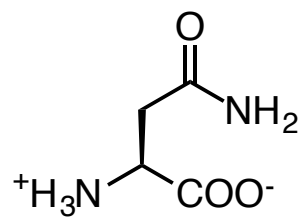
Leucine  
Leu  
L

Glycine  
Gly  
G

1

2

3



Lysine  
Lys  
K

Glutamic Acid  
Glu  
E

Tyrosine  
Tyr  
Y

15

16

17

Glutamine  
Gln  
Q

Aspartic Acid  
Asp  
D

Phenylalanine  
Phe  
F

12

13

14

Asparagine  
Asn  
N

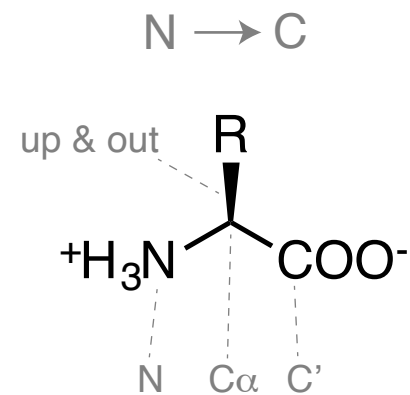
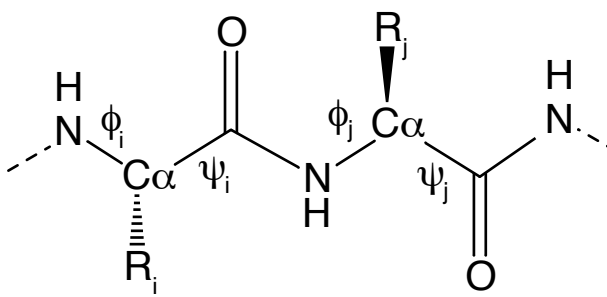
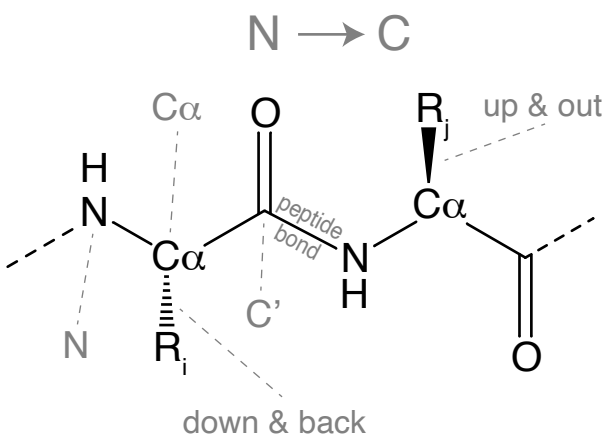
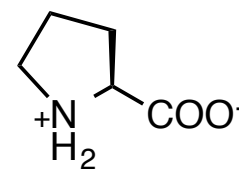
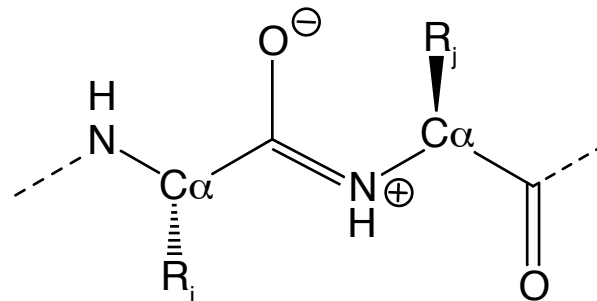
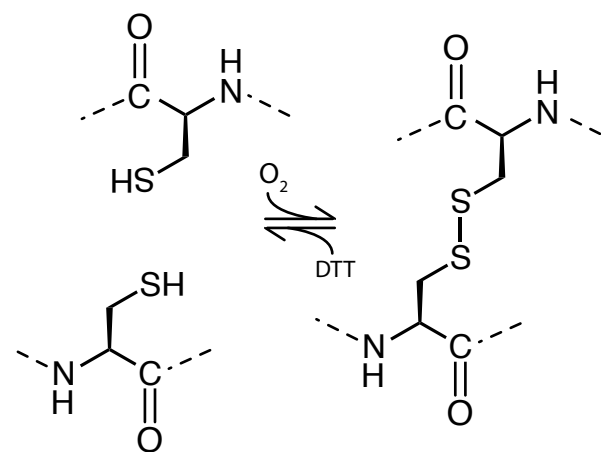
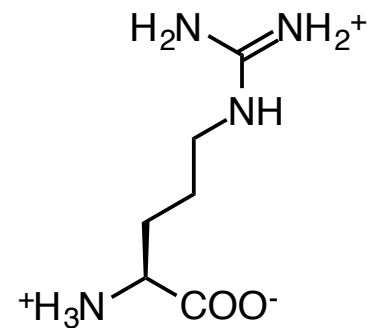
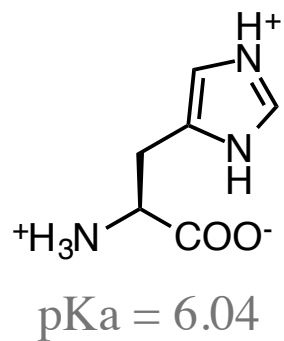
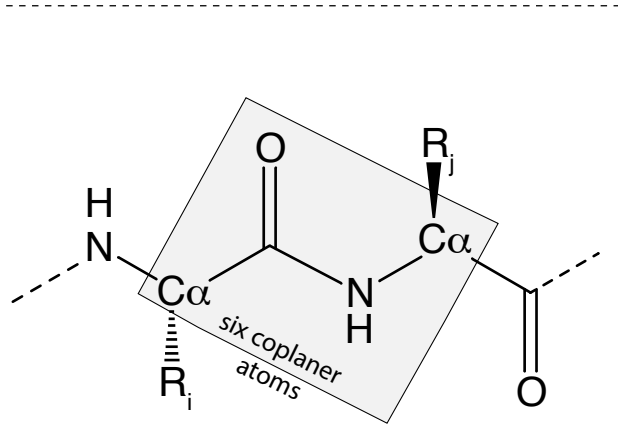
Tryptophan  
Trp  
W

Methionine  
Met  
M

9

10

11



Peptide Bond

24

Peptide Bond  
 $\phi\psi$

25

L- $\alpha$ -Amino Acid

26

Disulfide Formation

21

Peptide Bond  
resonance

22

Proline  
Pro  
P

23

Peptide Bond  
coplaner atoms

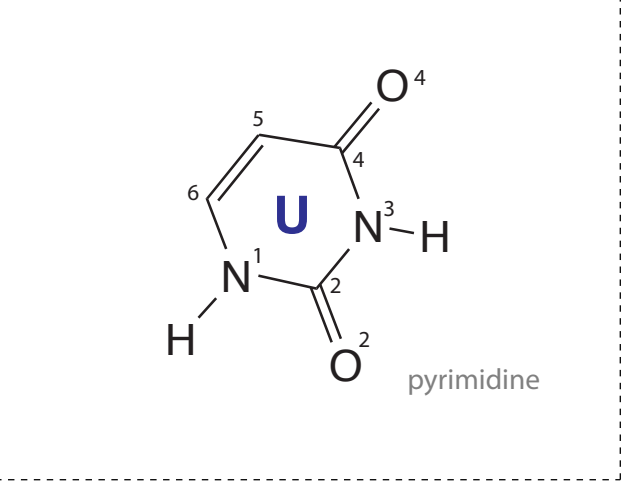
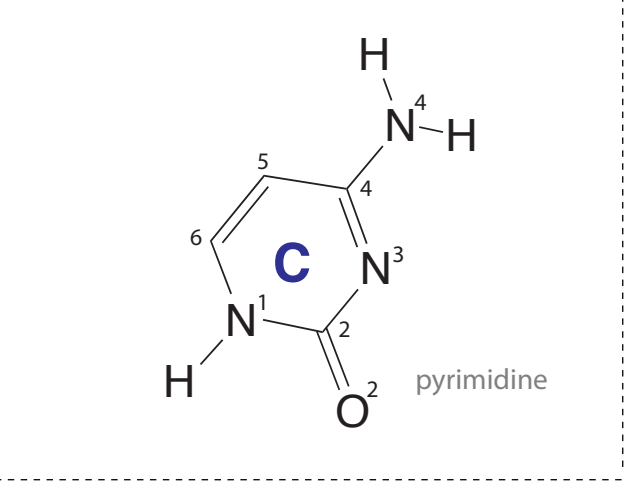
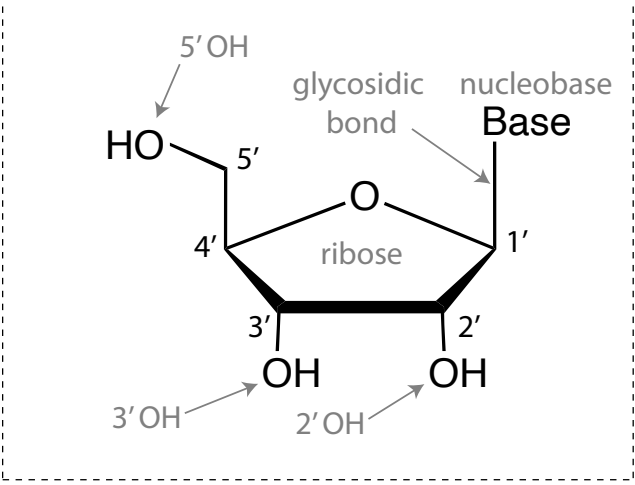
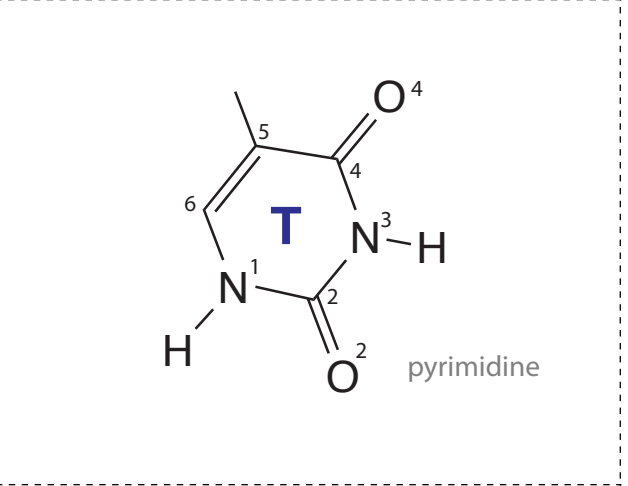
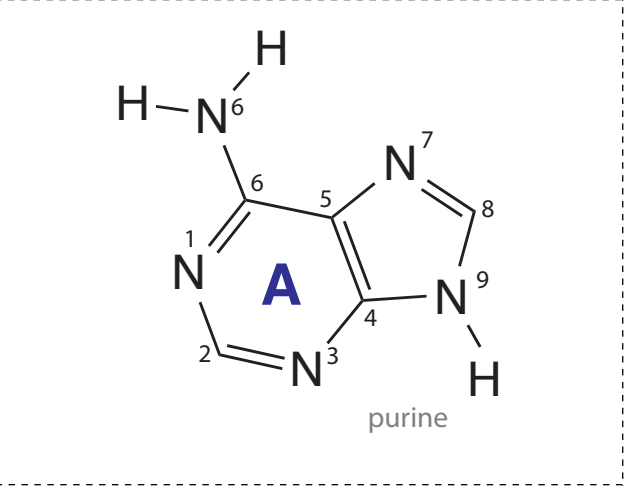
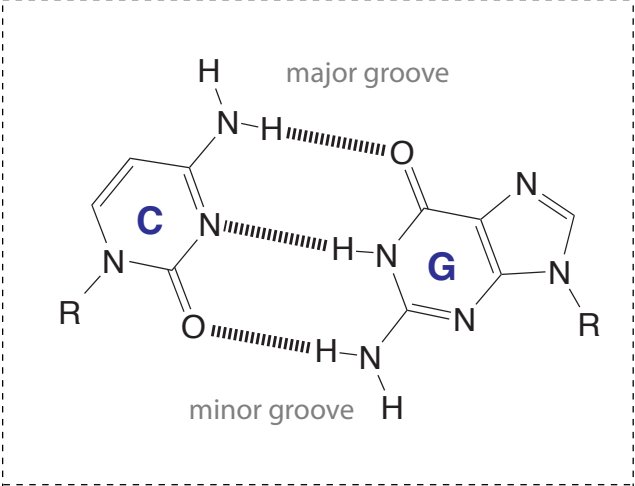
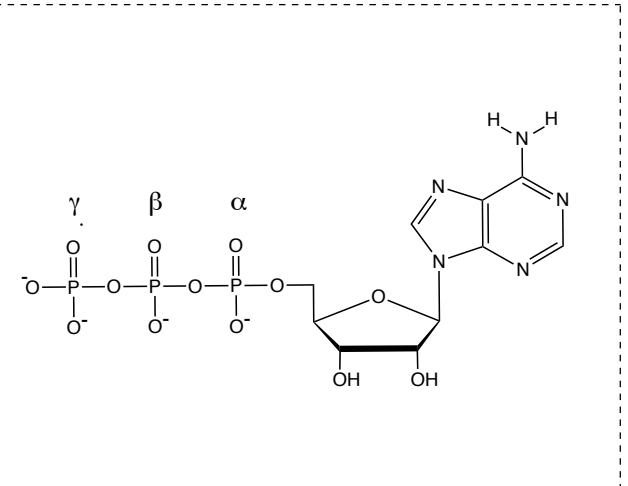
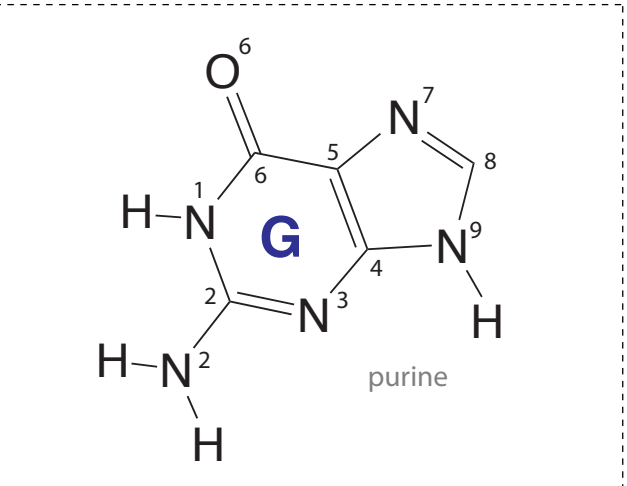
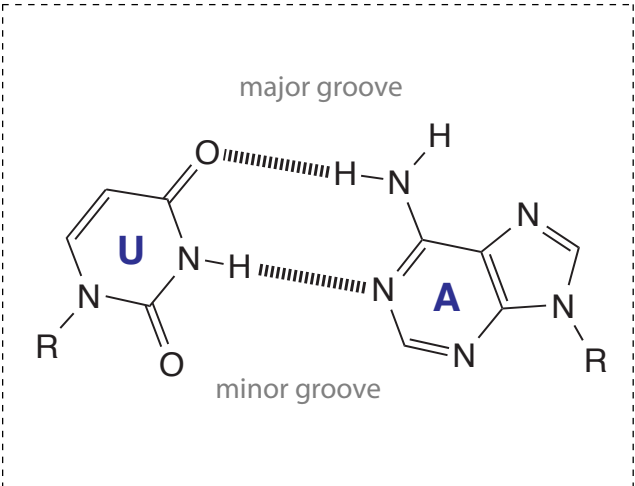
18

Histidine  
His  
H  
pKa

19

Arginine  
Arg  
R

20



**Nucleoside**  
atom numbers

33

**Cytosine**  
atom numbers

34

**Uracil**  
atom numbers

35

**C-G Base Pair**  
major/minor grooves

30

**Adenine**  
atom numbers

31

**Thymine**  
atom numbers

32

**U-A Base Pair**  
major/minor grooves

27

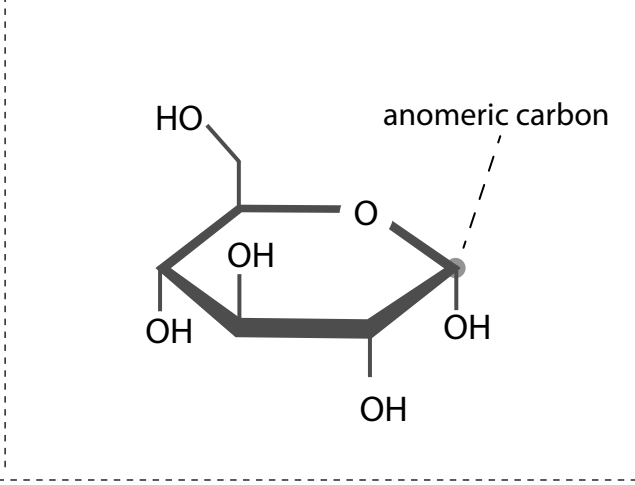
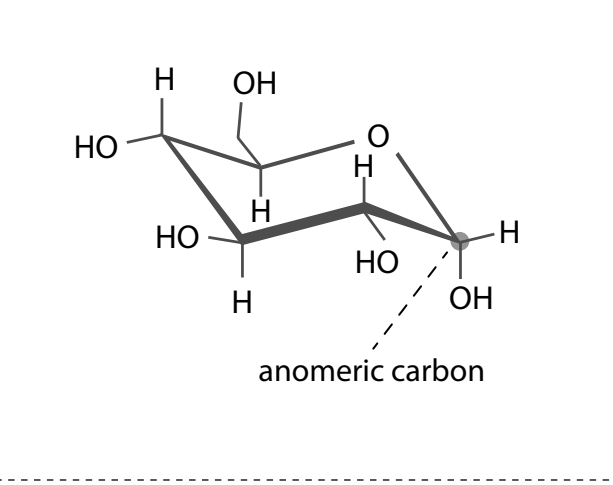
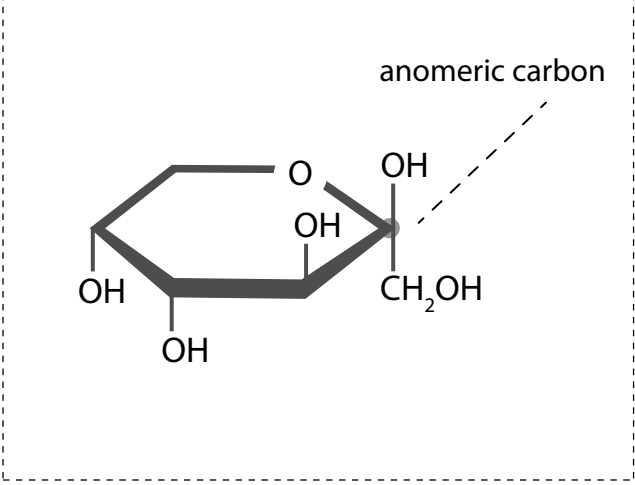
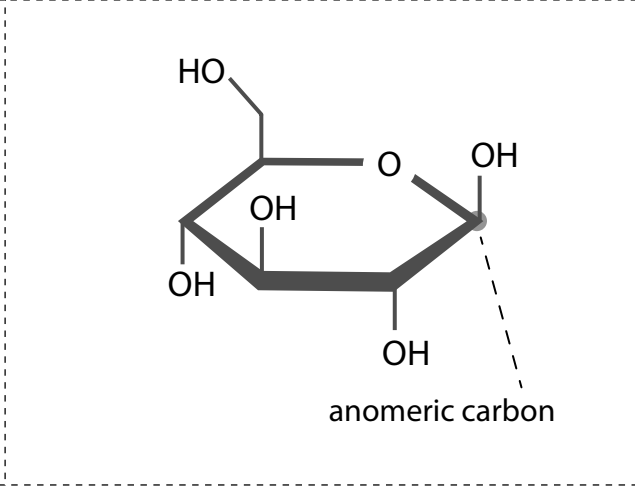
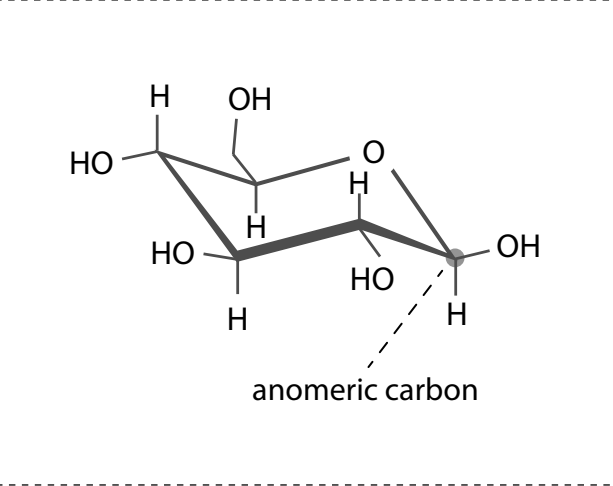
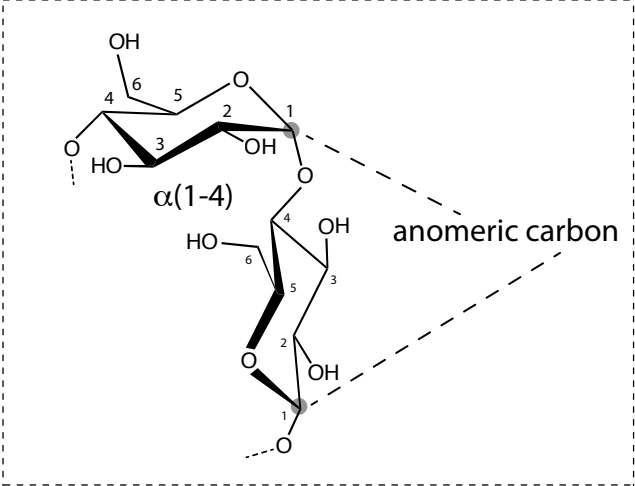
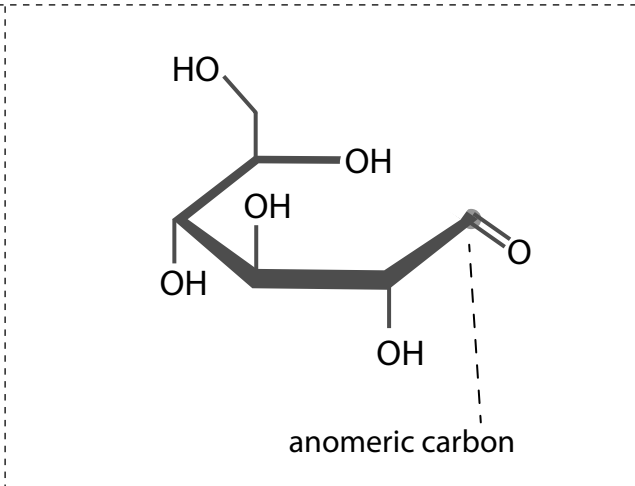
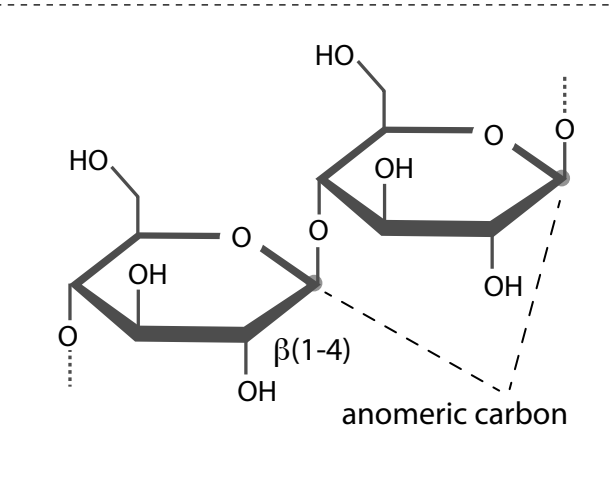
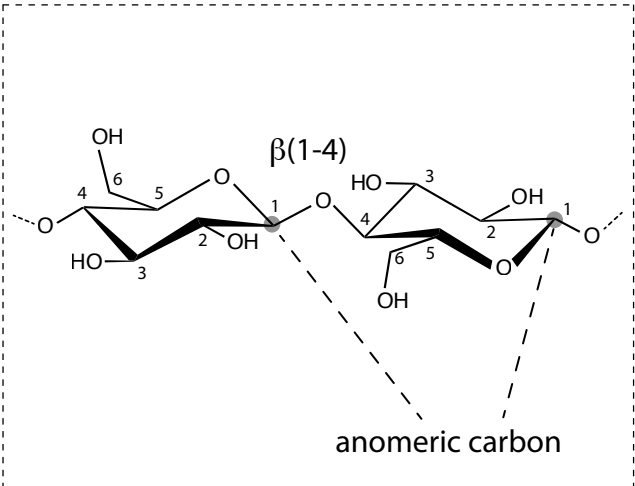
**Guanine**  
atom numbers

28

**ATP**

29





Fructose  
 $\beta$ -D-fructopyranose  
(Haworth)

42

$\alpha$ -D-Glucose  
(chair,  
pyranose)

43

$\alpha$ -D-Glucose  
(Haworth,  
pyranose)

44

Amylose  
(chair)

39

$\beta$ -D-Glucose  
(chair,  
pyranose)

40

$\beta$ -D-Glucose  
(Haworth,  
pyranose)

41

Cellulose  
(chair)

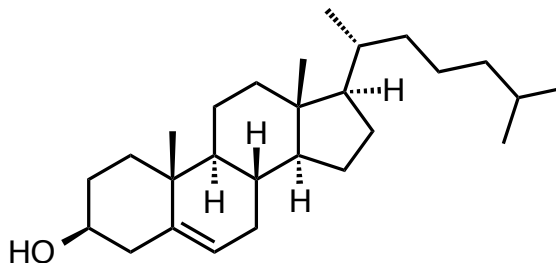
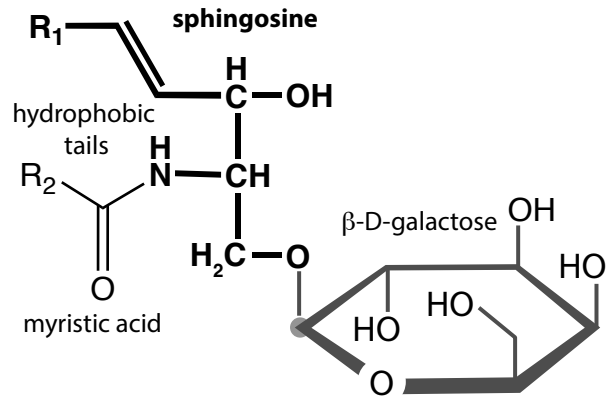
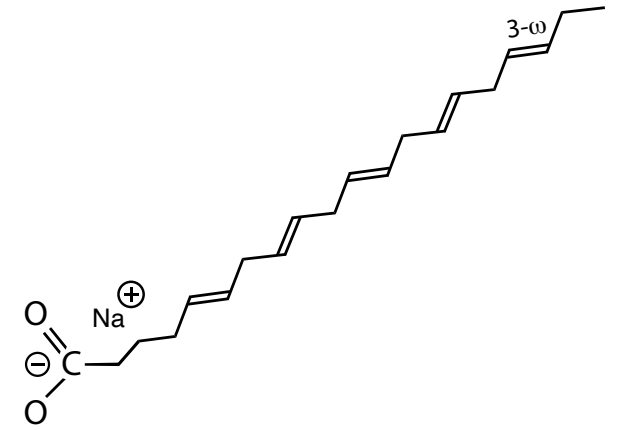
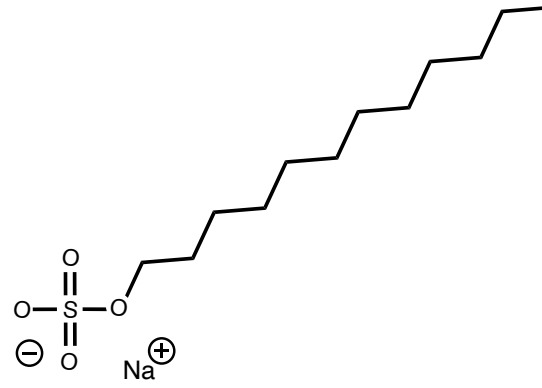
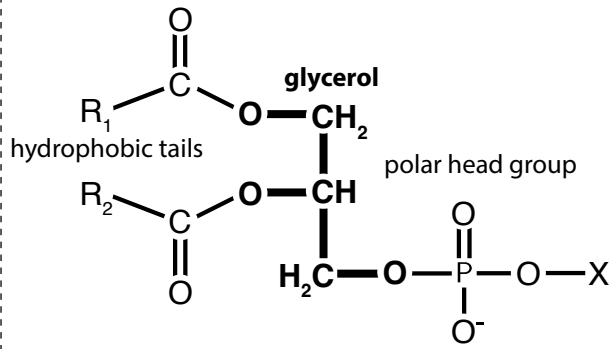
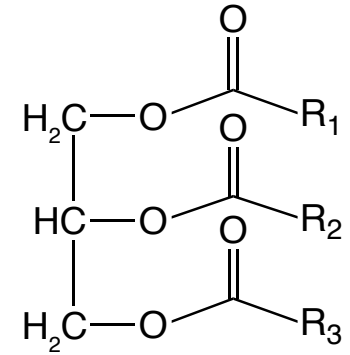
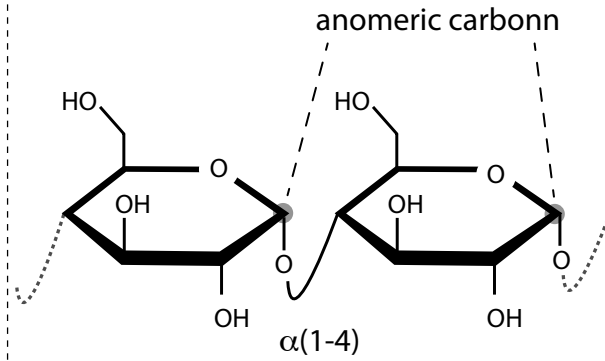
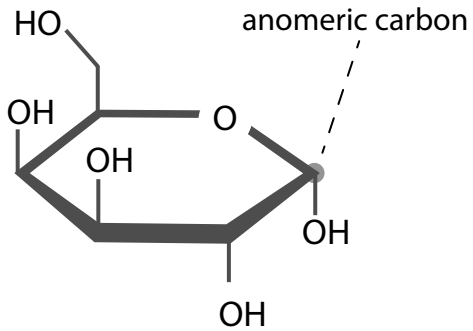
36

Cellulose  
(Haworth)

37

D-Glucose  
(Haworth,  
linear)

38



- Short range repulsion
- Electrostatic (integer charges)
- Dipolar
- Dipole-dipole
- Dipole-induced dipole
- Charge-dipole
- London Dispersion
- Cation- $\pi$
- Hydrogen bonding

Galactoceramide  
(a cerebroside)

51

Cholesterol

52

Molecular Interactions  
in a  
globular protein

53

Glycerophospholipid

48

SDS  
(sodium dodecyl sulfate)

49

Fatty Acid  
(EPA:  
eicosapentaenoic acid)

50

$\alpha$ -D-Galactose  
(Haworth)

45

Amylose  
(Haworth)

46

Triacylglycerol

47