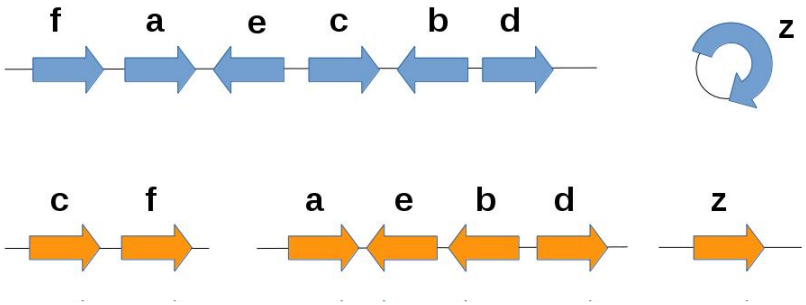
MO640 - Computational Biology
Open-Ended Exam 2 - May 21st, 2015

Question 1 (2.5 points) Find a most parsimonious tree for the species vs. characters matrix below.

Species	Characters					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
S1	0	0	0	0	0	1
S2	2	1	2	3	3	0
S3	1	0	1	1	1	0
S4	1	2	1	1	1	0
S5	0	0	0	2	2	0
S6	0	1	2	0	0	0
S7	1	1	1	3	4	0
S8	1	1	1	3	3	0



For questions 2, 3, and 4, consider the two genomes above, and explain your steps.

Question 2 (2.5 points) Find the SCJ distance between the given genomes.

Question 3 (2.5 points) Find the DCJ distance between the given genomes.

Question 4 (2.5 points) Find the algebraic distance between the given genomes.

Good luck!