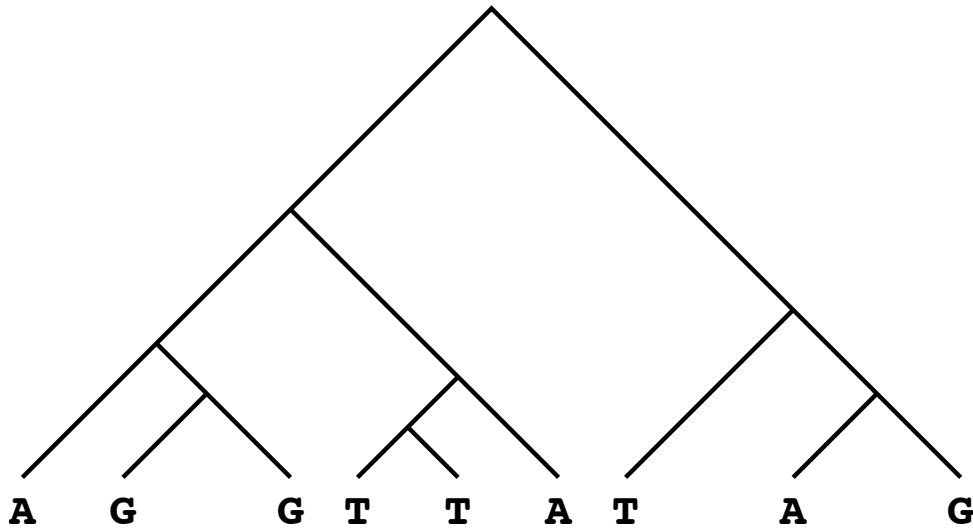
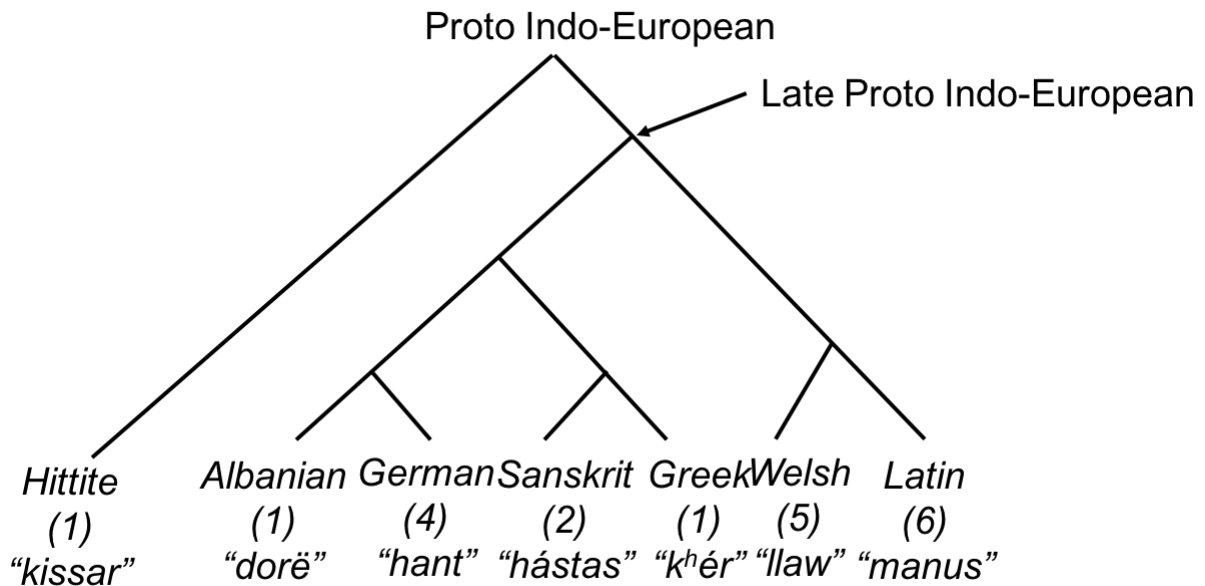


Parsimony handout I: Fitch's algorithm

Run Fitch's algorithm on the following tree. What are the states of the internal nodes. What is the parsimony score?



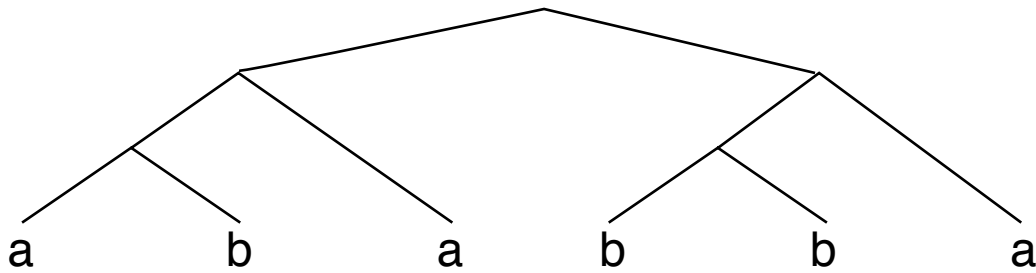
The tree below shows the relationship between a subset of Indo-European languages (445 extant languages, with 3.2 billion native speakers), along with the word for “hand”, with numerical groupings for similar words. In which group was the word for “hand” in PIE? If you didn't know about Hittite (no longer spoken), would your answer change?



Parsimony handout II: Sankoff's algorithm

Solve the two examples below using the Sankoff's algorithm and the provided cost matrices.

σ	a	b
a	0	2
b	1	0



δ	A	T	G	C
A	0	3	4	9
T	3	0	2	4
G	4	2	0	4
C	9	4	4	0

