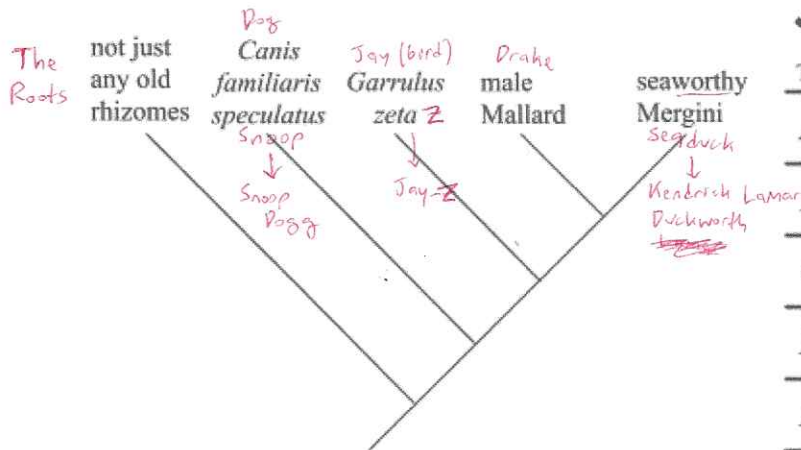


The Evolution of Hip-Hop

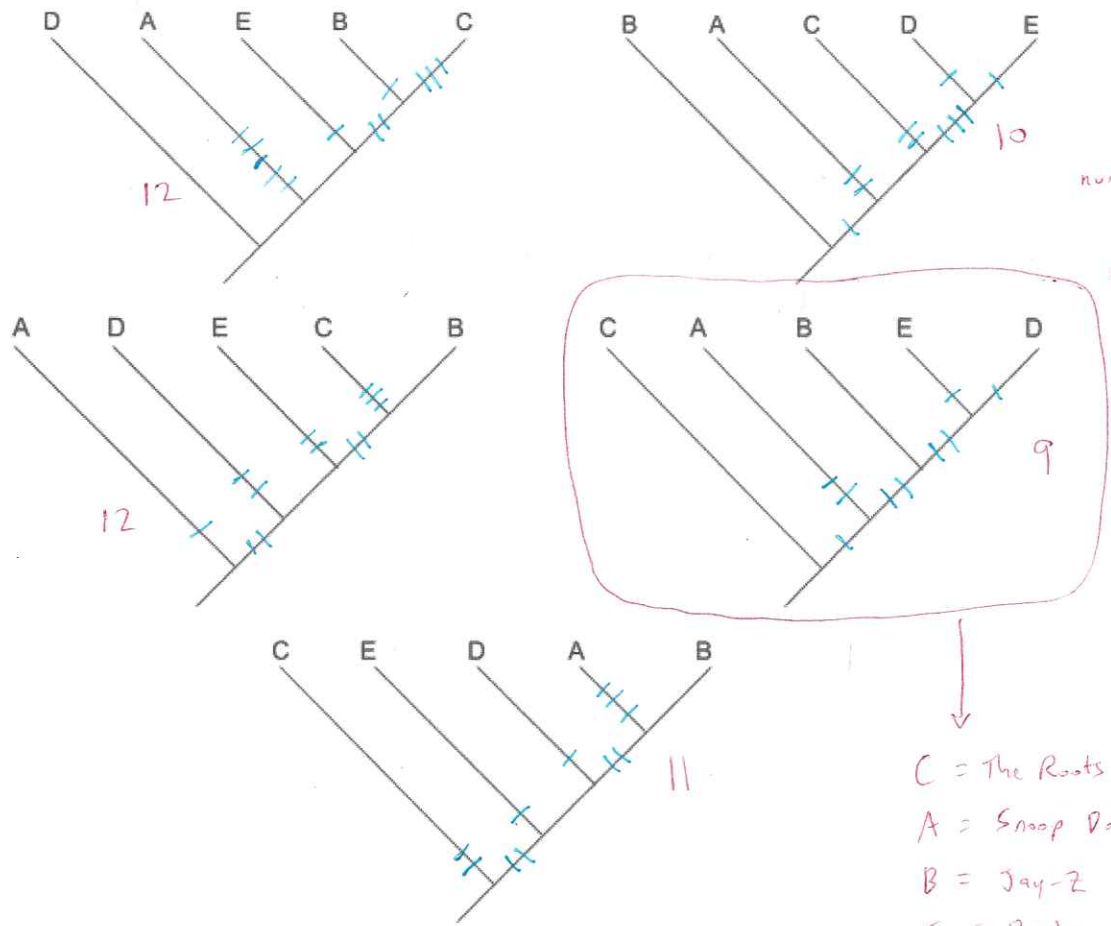
What's the common ancestor of Pitbull and Megan Thee Stallion? Are Beastie Boys a monophyletic group?

Here is an interesting phylogeny of hip-hop artists. Uh-oh! I've forgotten which taxon corresponds to which letter in the genetic data table!



Taxon \ Locus	1	2	3	4	5
A	G	T	A	C	A
B	T	T	G	C	T
C	A	A	G	C	A
D	T	C	C	A	T
E	T	C	T	A	T

Hmm... What do I remember? The correct tree is one of these five, and it's the most parsimonious (i.e., the one requiring the fewest independent evolution/loss events).



Tick mark placement (not number) may vary, but this is the correct tree regardless of different configurations; the number of tick marks (evolutionary events; gain or loss of an allele) is what matters.

- C = The Roots
- A = Snoop Dogg
- B = Jay-Z
- E = Drake
- D = Kendrick Lamar

Impact of Alleles for Decryption

Locus Allele	1	2	3	4	5
A	M→O	Q→F	Y→M	M→A	V→N
C	E→D	J→H	W→S	J→A	A→O
T	F→T	P→S	V→E	F→R and P→A	Y→R and Q→L
G	R→E	U→Z	B→E	V→U	S→I

So many phrases for the same thing...

- Roots** Tariq, Ahmir, et al: "QRJVK MCBJV SMVG" → FRANK OCEAN SONG
M→O, Q→F, B→E, ~~V→U~~, J→A, V→N
F AN O EAN ON
- Jay-Z** Shawn: "JNFBYIOY MBDUQQJ PFYUCFUYBP" → ANTERIOR MEDULLA STRUCTURES
F→T, P→S, B→E, J→A, Y→R, Q→L
A TER R E LLASTR T RES
- Snoop** Calvin: "UXPUPTJIVJBLR PCHRYRP" → UNSUSTAINABLE SCHEMES
R→E, P→S, Y→M, J→A, V→N
NS S ANA ES EME S
- Kendrick** Kendrick: "CJOQUQM MND GIZM WFYUCFUYEW" → CHOLULA AND GIZA STRUCTURES
F→T, J→H, W→S, M→A, Y→R, Q→L
H L L A A A STR T R S
- Drake** Aubrey: "FVFMJVVDYONS" → TETRAHEDRONS
F→T, V→E, J→H, M→A, Y→R, Q→L
TETRAHE R

FRANK OCEAN SONG
 ANTERIOR MEDULLA STRUCTURES
 UNSUSTAINABLE SCHEMES
 CHOLULA AND GIZA STRUCTURES
 TETRAHEDRONS

} PYRAMIDS