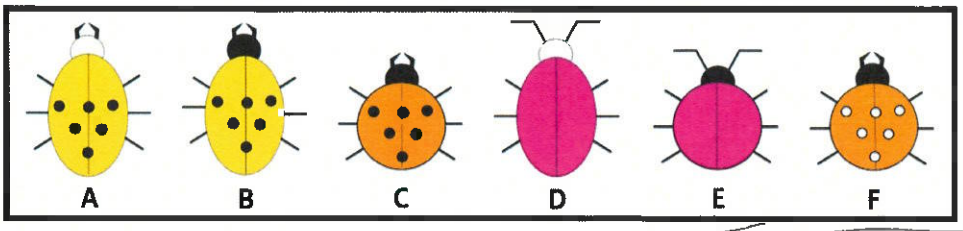
Determine which tree hypothesis below is the most parsimonious tree for these six beetle species. Answer by mapping character evolution along each tree. The tree with the smallest total number of changes ("parsimony score", or "tree length") is the most parsimonious tree.

Perform this task by mapping each character (column in the matrix) at a time. The final parsimony score is the total sum of all mapped changes for the seven columns.

When mapping, assume the ROOT has the same character states (traits) as species F.



Feature	Body shape	Colour	Head colour	Antennae present?	Jaws visible?	Spots on back?	Colour of spots
A	Oval	Yellow	White	No	Yes	Yes	Black
B	Oval	Yellow	Black	No	Yes	Yes	Black
C	Round	Orange	Black	No	Yes	Yes	Black
D	Oval	Pink	White	Yes	No	No	None
E	Round	Pink	Black	Yes	No	No	None
F	Round	Orange	Black	No	Yes	Yes	White

trickier than exam! promise!

this is the trick! If no spots, of course no color - so can only track spots (no color) for D