Consider the following CFG:

\[ E \rightarrow DD \]
\[ D \rightarrow FJ \mid cF \mid aD \mid cD \]
\[ F \rightarrow ab \mid ad \mid J \]
\[ J \rightarrow ra \mid ar \mid \varepsilon \]

a. Write the formal definition of the above CFG.
b. Show the LMD and RMD for deriving the string “abracadra”.
c. Draw the parse for the above derivation
d. Is the grammar ambiguous for the given string?