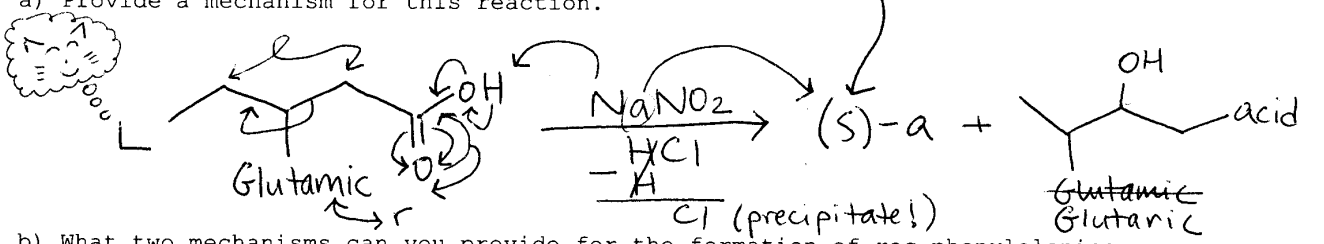
Name: Johnny Vorgas

CHEM 221b
Problem Set 10, Chapter 24
Amino Acids

1) Treatment of L-glutamic acid with $NaNO_2$/aq. HCl produces (S)-a-hydroxyglutaric acid. Ooh, you said "acid"!

a) Provide a mechanism for this reaction.



b) What two mechanisms can you provide for the formation of rac-phenylalanine from the a-bromo acid as shown on the top of pg. 1129?

In my textbook, the only thing close to a-bromo acid on this page is a picture of Hollywood's own Nicole Kidman. Man, would I like to see her rac-phenylalamo! She could have my mechanism any day!

c) What impact would this mechanism have on the chirality of phenylalanine if the (R)-a-bromo acid were used?

Oh, no big deal... it'd just blow the chirality of phonyalanon to fucking PIECES!! You'd put some of that in there and it'd be like, DAMN — pharaohamazon got served!!

2) Provide a mechanism for the formation of Ruhemann's purple from phenylalanine and ninhydrin. Explain why CO_2 is readily lost.

Phalloalanalda is blue when you put it in a solution, so combining it with some ninhydrin that's red will make a purple. Ruhemann was a very important scientist who invented the color purple and so we name it after him. He went on to become a famous drag queen, I think. Anyway, it's obvious why CO_2 gets lost — it's too much of an asshole to ask for directions. According to your wife, that should sound familiar!