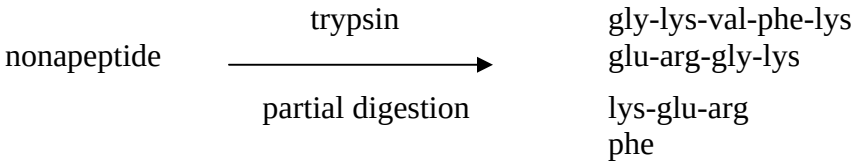
This problem was discussed in video (15). We discussed only part I of a multipart problem. In the previous part of the problem, part H, it had been determined that the C-terminal amino acid of the nonapeptide was phenylalanine.

I. It is sometimes useful to subject a peptide to partial protease digestion, meaning that the protease has not had time to react at all sites it is capable of cleaving. Assume that the trypsin does not prefer reacting at one site better than another. Based on a partial digestion of the nonapeptide in part H, three peptides were isolated and sequenced. Some phenylalanine was also isolated. What is the structure of the nonapeptide?



(Notice that this problem is different from some other trypsin problems because the peptide is only *partially* digested—that is, the trypsin is not given time to make cuts in all the places it could potentially make cuts. This is the reason why the resulting fragments can overlap with each other. In some other trypsin problems enough time would be given for *complete* digestion; in that case there would be no overlap between the resulting fragments.)