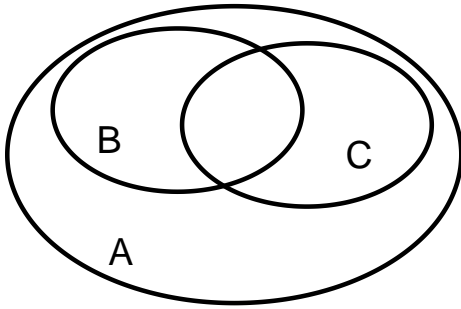


**Exercise 1:**

Chapters 3.5 and 3.6 of the lecture introduce linear discriminant analysis (LDA), quadratic discriminant analysis (QDA), and Naive Bayes (NB), all of which constitute **generative approaches** to classification. With everything you have learned about QDA, LDA, and NB, how can model assumptions be reframed to fit all three approaches in the Venn diagram shown below?



Hint: Firstly, think about how B and C could be seen as special case of A, respectively. Then, think about how you could specify the intersection of B and C.