

Supplementary exercise 4.92 of IPS7e

The Venn diagram resulting from inserting the proportions provided is shown below. The proportions need to be inserted sequentially because several of them refer to subsets of the Venn diagram obtained by combining several of the areas. The steps are as follows:

- insert 0.05 for “coffee and tea and cola”, and insert 0.05 for “only tea”,
- insert 0.10 for “coffee and tea, but not cola”, because taken together with the 0.05 for all beverages this will give a proportion of 0.15 for “coffee and tea” (and no information about cola),
- insert 0.20 for “coffee and cola, but not tea”, because taken together with the 0.05 for all beverages this will give a proportion of 0.25 for “coffee and cola” (and no information about tea),
- insert 0.05 for “cola and tea, but not coffee”, because taken together with the proportions above involving tea this will give a total proportion for tea of 0.25,
- insert 0.20 for “coffee alone”, because taken together with the proportions above involving coffee this will give a total proportion for coffee of 0.55,
- insert 0.15 for “cola alone”, because taken together with the proportions above involving cola this will give a total proportion for cola of 0.45; this is the **answer for (a)**,
- insert 0.20 for “no coffee, no tea, and no cola” because all the other proportions add up to 0.8; this is the **answer for (b)**.

