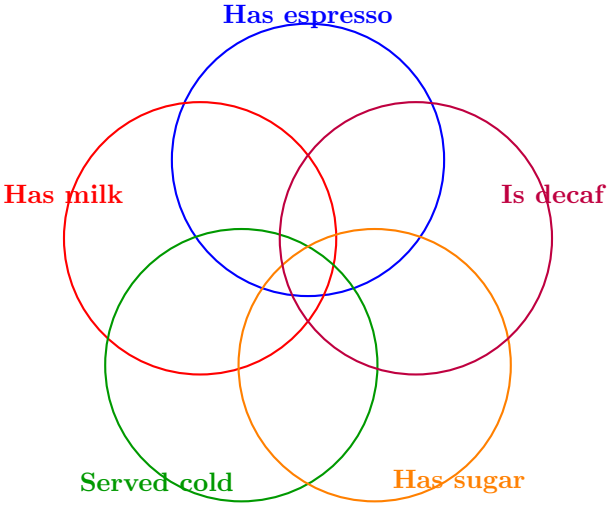


Impossible as stated. Five circles determine at most $n^2 - n + 2 = 5^2 - 5 + 2 = 22$ regions. A five-set Venn diagram, however, requires $2^5 - 1 = 31$ non-empty regions. Therefore no arrangement of five circles can show all 31 regions. The figure above is a generic five-circle arrangement; it has 22 regions, which is the maximum possible for five circles. If the "circles only" constraint is relaxed, five ellipses can form a complete five-set Venn diagram with all 31 regions.