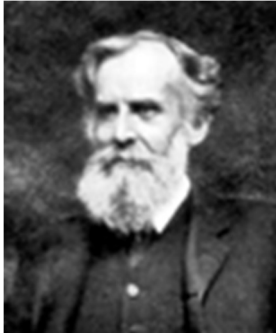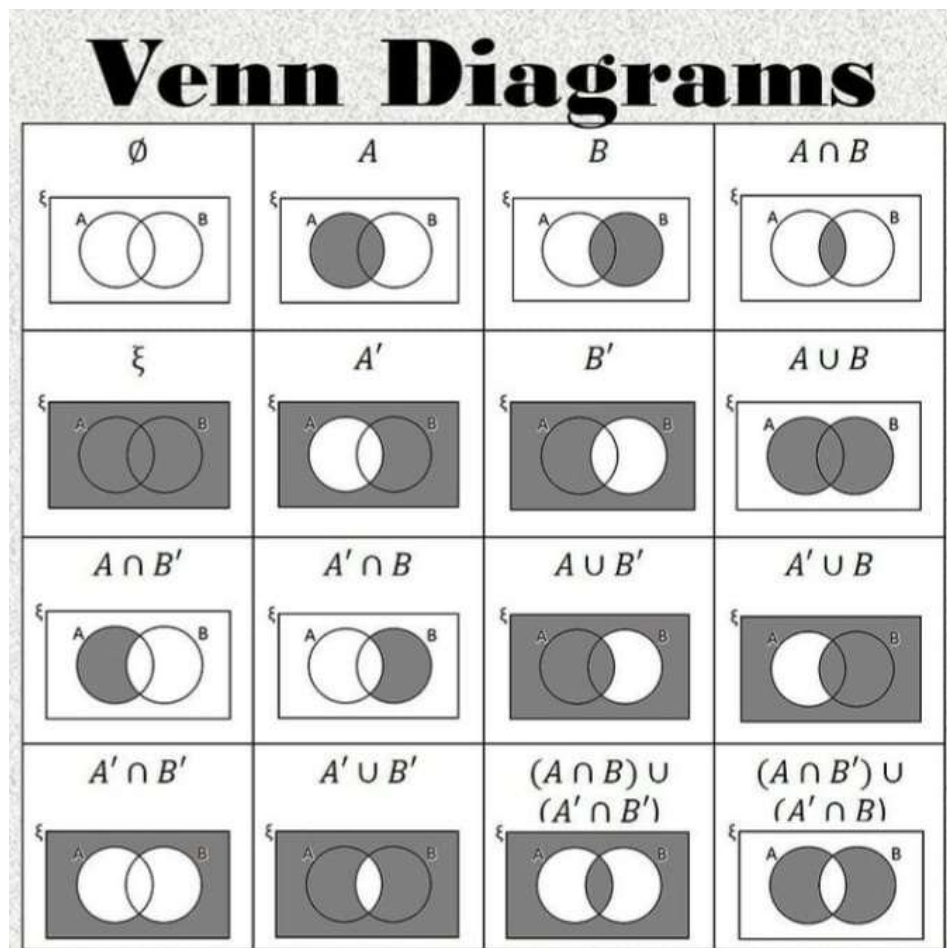# Venn Diagrams and More
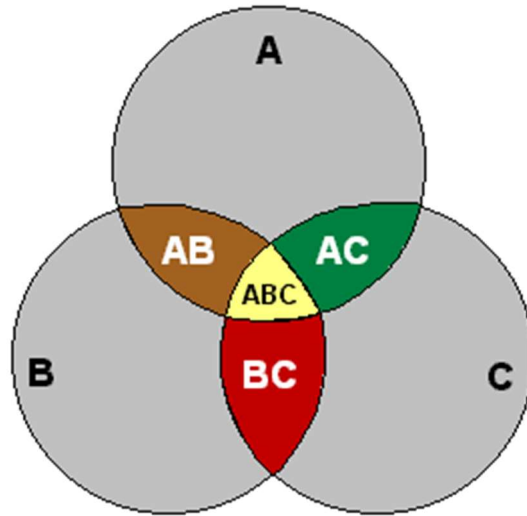
John Venn (1834-1923), British intellectual (mathematician, philosopher, logician, etc.)

A boring collection of Venn diagrams for two sets
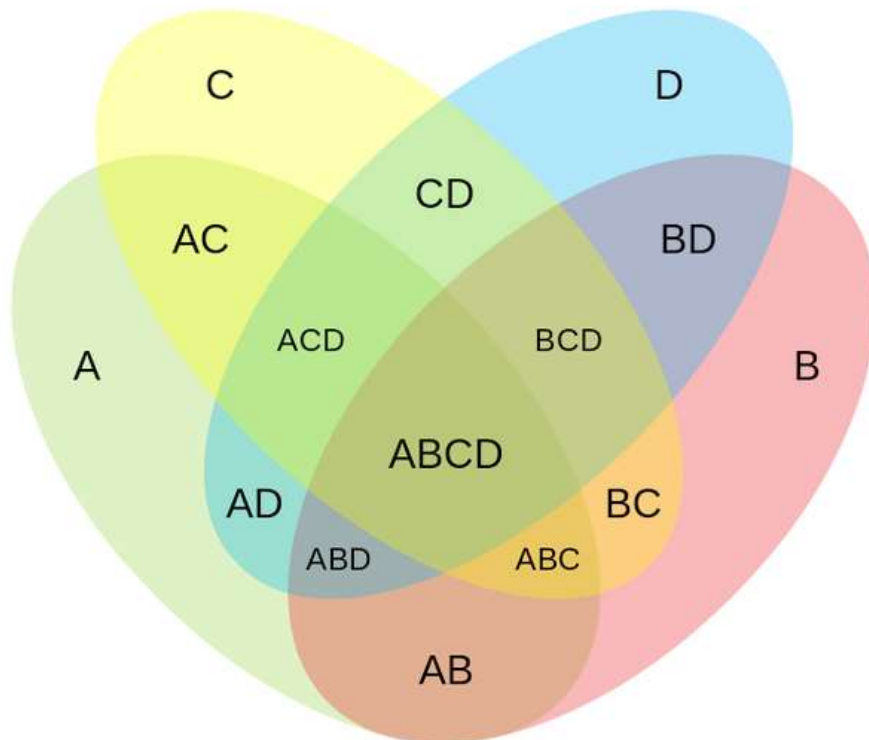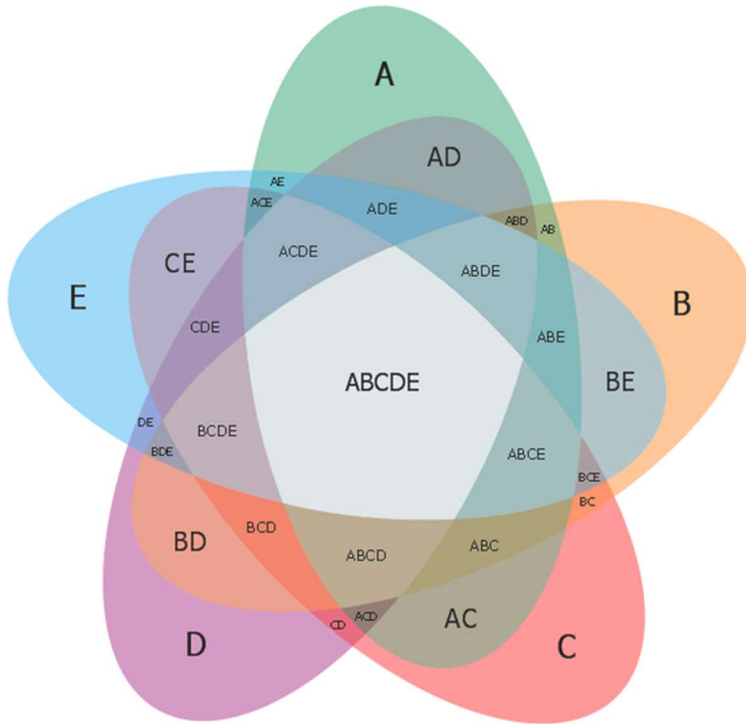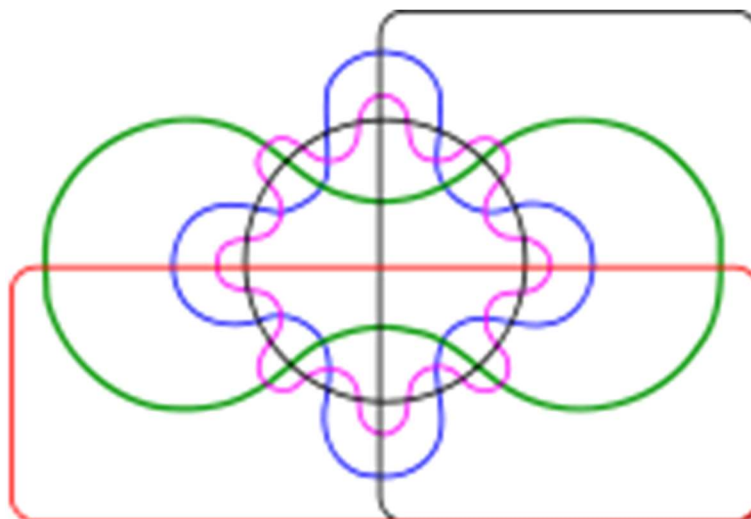
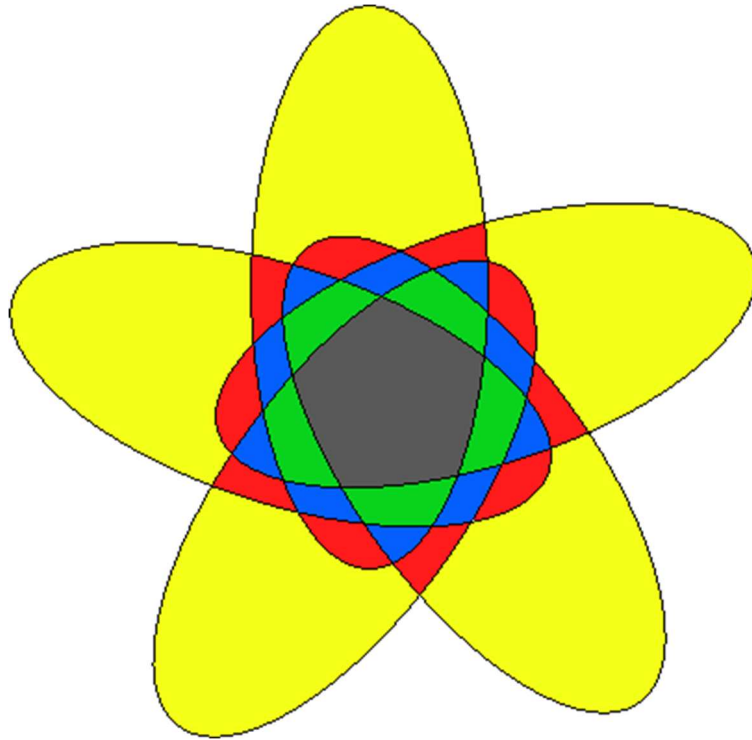Venn diagram for three sets

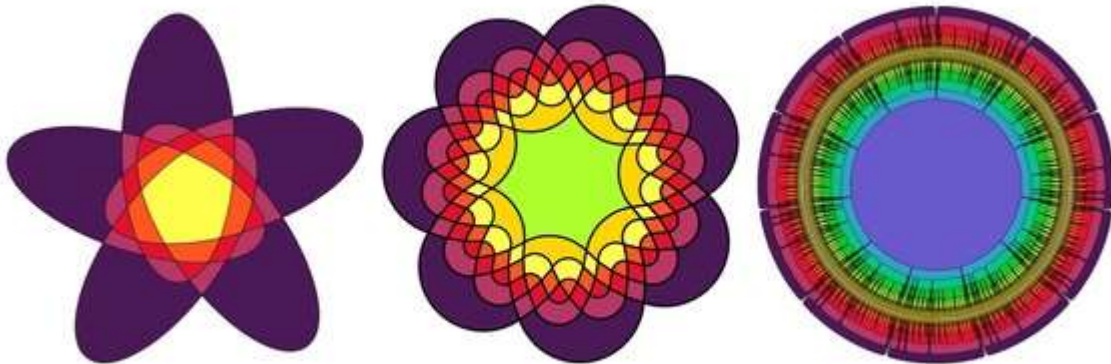Venn diagram for four sets

Venn diagram for five sets

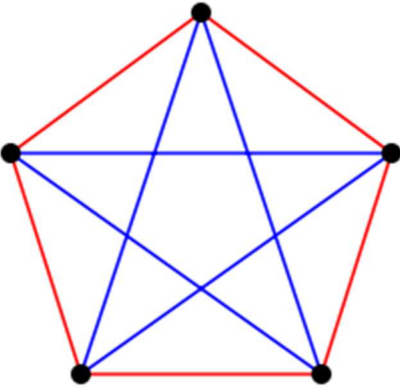Venn diagram for six sets

Venn diagrams as art work

Five sets

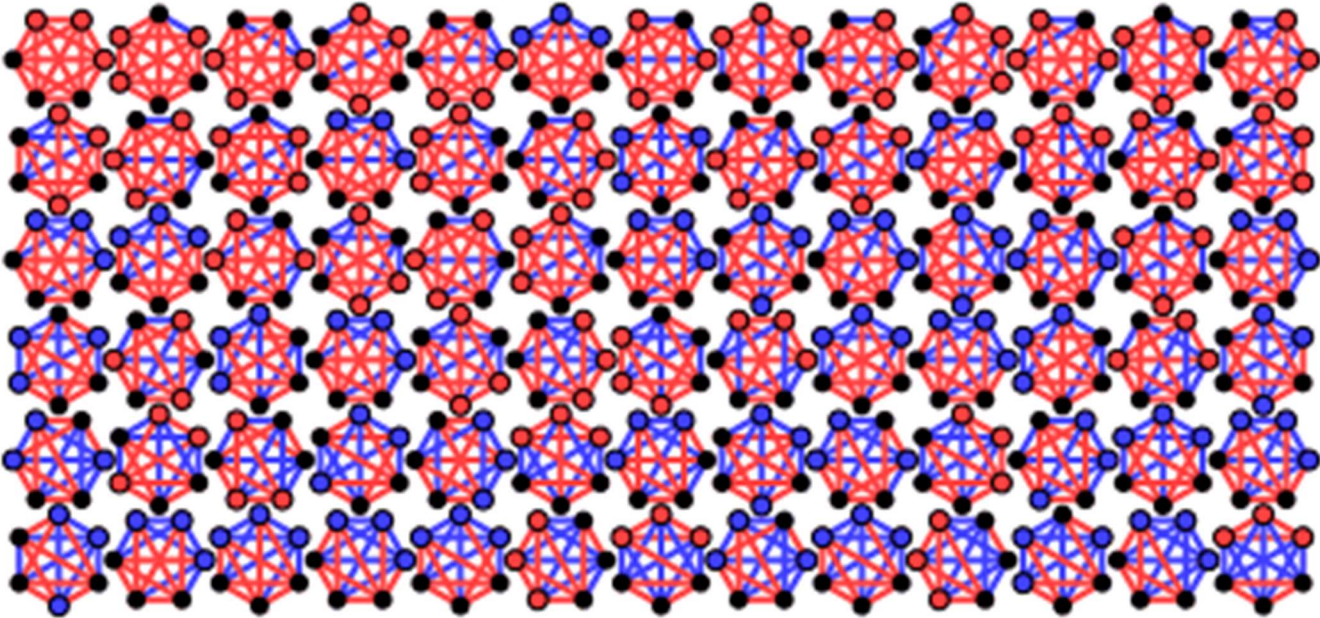

Symmetric Venn diagrams: (a) $n = 5$, (b) $n = 7$, (c) $n = 11$.

Prime number of sets (5,7,11)

Further directions: Complete graphs and Ramsey numbers

No monochromatic triangle on five vertices

Always a monochromatic triangle on six vertices: R(3,3)=6

Frank Plumpton Ramsey (1903-1930), British philosopher, mathematician, and economist. R(r,b) is minimal number of vertices in a complete graph so that EVERY red-blue coloring of the edges gives a red clique on r vertices OR a blue clique on b vertices.

Further directions: growth models from nature

Corner growth

Gaussian Free Field