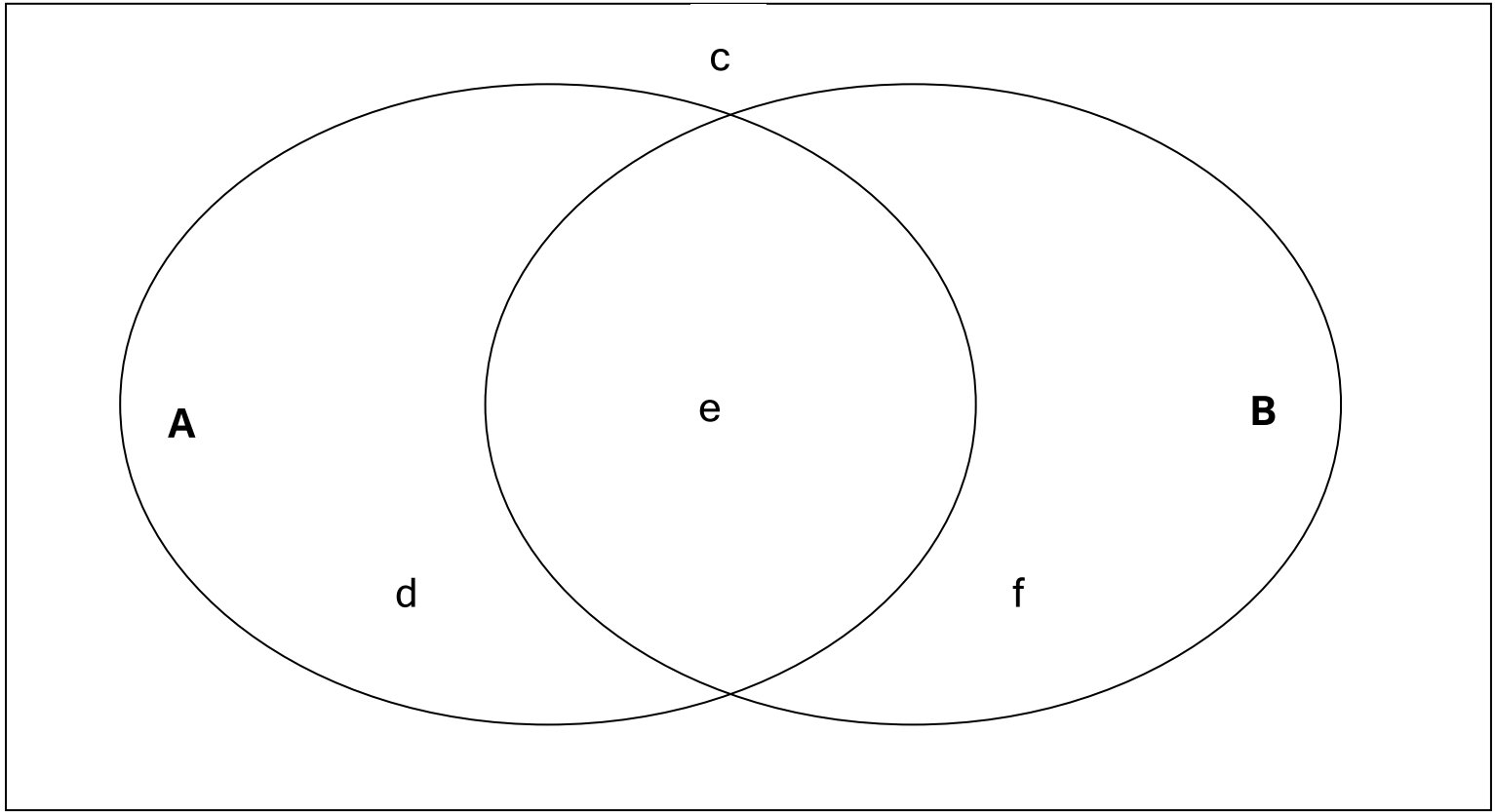# Probability and the Venn Diagram

Concept: $c + d + e + f = 1$

$P(A)=\dfrac{d+e}{c+d+e+f}$

$P(A\cap B)=\dfrac{e}{c+d+e+f}$

$P(\overline{B}|A)=\dfrac{d}{d+e}$

$P(\overline{A})=\dfrac{c+f}{c+d+e+f}$

$P(\overline{A\cap B})=\dfrac{c+d+f}{c+d+e+f}$

$P(\overline{A}|B)=\dfrac{f}{e+f}$

$P(B)=\dfrac{e+f}{c+d+e+f}$

$P(\overline{A}\cup\overline{B})=\dfrac{c+d+f}{c+d+e+f}$

$P(A|\overline{B})=\dfrac{d}{c+d}$

$P(\overline{B})=\dfrac{c+d}{c+d+e+f}$

$P(\overline{A}\cap\overline{B})=\dfrac{c}{c+d+e+f}$

$P(\overline{A}|\overline{B})=\dfrac{c}{c+d}$

$P(A\cup B)=\dfrac{d+e+f}{c+d+e+f}$

$P(A|B)=\dfrac{e}{e+f}$

$P(B|\overline{A})=\dfrac{f}{c+f}$

$P(\overline{A\cup B})=\dfrac{c}{c+d+e+f}$

$P(B|A)=\dfrac{e}{d+e}$

$P(\overline{B}|\overline{A})=\dfrac{c}{c+f}$

This handout is available at: www.uvu.edu/mathlab/