

Expected Values of Sums

- Let $g(X, Y) = X + Y$.
 - Compute $E[g(X, Y)] = E[X + Y]$
 - $E[X + Y] = E[X] + E[Y]$
- Generalized: $E\left[\sum_{i=1}^n X_i\right] = \sum_{i=1}^n E[X_i]$
 - Holds regardless of dependency between X_i 's
 - We'll prove this in a few days