Problem Set
following Enumerative Combinatorics, vol I, by Richard Stanley

P1 How many subsets of the set \([7] = \{1, 2, \ldots, 7\}\) contain at least one odd integer?

\[\cdots\cdots\]

P2 Eight people split into 4 groups of two each. In how many ways can this be done?

\[\cdots\cdots\]

P3 There are 5 bears and 3 squirrels and each bear dances with one squirrel. In how many ways can this be done?

\[\cdots\cdots\]

P4 How many functions \(f : [4] \rightarrow [4]\) are there such that no 3 elements of [4] map to the same element under \(f\)?

\[\cdots\cdots\]

P5* (extra credit) Prove \(\sum_{i=0}^{n} i \binom{n}{i} = n 2^{n-1}\).