Stat 579 Homework Set #1

1. Consider repeated, independent rolls of a fair die.

(a) Let Y_1 be the number of ones in 50 rolls. Completely specify the probability function for Y_1 .

(b) Let $(Y_1, Y_2, \ldots, Y_6)$ be the number of ones, twos, etc. in 50 rolls. Completely specify the probability function for $(Y_1, Y_2, \ldots, Y_6)$.

2. Let $Y_1 \sim POI(1)$, $Y_2 \sim POI(2)$, $Y_3 \sim POI(3)$ be independent random variables.

(a) Completely specify the probability function for (Y_1, Y_2, Y_3) .

(b) Completely specify the probability function for $Y_+ = \sum_1^3 Y_i$.

(c) Completely specify the conditional probability function for (Y_1, Y_2, Y_3) given $Y_+ = n$.