Noel Ball
HW3

5.1-3.)

5.2-1.) The first candidate has a $\frac{1}{n}$ chance of being the most qualified of n candidates with no other hires being necessary, so there is a $\frac{1}{n}$ chance to hire exactly one time. The probability that every candidate improves resulting in n hires Pr = $(\frac{1}{n} * \frac{1}{n-1} * \frac{1}{n-2} \ldots * \frac{1}{1}) = \frac{1}{n!}$.

5.2-3) X_i = I{die rolls i}, value of one roll X = $\sum_{i=1}^{6}$ i * X_i, E[X_i] = Pr{die rolls i} = $\frac{1}{6}$, expected value of one roll E[X] = $\sum_{i=1}^{6} \frac{i}{6}$ = 3.5, sum of n rolls X_n = $\sum_{i=1}^{n}$ X, E[X_n] = $\sum_{i=1}^{n}$ 3.5 = 3.5n.

5.2-6.)

5.3-3.)

5.3-4.)