

STATS 528: Exam 1

John Sherrill

October 19, 2015

1. (a) $X \sim \text{Bin}(500, 0.002)$

(b)

$$(P(X < 2))^{10} = (0.736)^{10} = 0.736^{10}$$

2. (a) $X \sim \text{HyGeom}(N = 1000, K = 5, n = 25)$

(b)

$$P(X \leq 1) = P(X = 0) + P(X = 1) = \frac{\binom{5}{0} \binom{1000-5}{25-0}}{\binom{1000}{25}} + \frac{\binom{5}{1} \binom{1000-5}{25-1}}{\binom{1000}{25}} = 0.994$$

3. Pareto chart for a check sheet:

