Stat13 Homework 3

Suggested Solutions

Problem 1: (30 points total)
1) n=11, p=4% (2 points)
2) three conditions: (P206 in our textbook)
a) two outcomes (2 points)
b) different object has the same probability (2 points)
c) different objects are independent. (2 points)
3) yes (2 points)
4)

a) $\Pr(X=0) = \binom{11}{0}(4\%)^0(1-4\%)^{11} = 63.82\%$ (5 points)

b) $\Pr(X=2) = \binom{11}{2}(4\%)^2(1-4\%)^9 = 6.09\%$ (5 points)

c) $\Pr(X \geq 3) = 1 - \Pr(X=0) - \Pr(X=1) - \Pr(X=2) = 0.83\%$ (5 points)
d) $\Pr(2 \leq X \leq 5) = \Pr(X=2) + \Pr(X=3) + \Pr(X=4) + \Pr(X=5) = 6.92\%$ (5 points)

Problem 2: (15 points total)
1) 12% (3points)
2) 29%*29%=8.41% (4 points)
3) 20.79% (4 points)
4) 34.1% (4 points)

Problem 3: (15 points total, 5 points each)
1) 150 / 275 = 54.55%
2) 37 /275 = 13.45%
3) (40+53+26+6+37+11) / 275 = 62.91%