1)a) np = 109.2, n(1 − p) = 490.8
b) mu = 109.2, sigma = 9.451
c) 34.8% using normalcdf, 35.1% using binomcdf
d) 2.4% normalcdf and binompdf
e) 40.2% normalcdf, 40.7% binomcdf

2)a) np = 71.05, n(1 − p) = 131.95
b) mu = 71.05, sigma = 6.796
c) 25.6%/25.5%
d) 69.4%/69.6%
e) 5.0%/4.9%
f) yes

Part 2
1a)
PP PS PR
SP SS SR
RP RS RR
b) 1/3
c) 1/3
d) 1/3
e) 1/9
f) 1/27
g) 1/81
h) 1/3 + 1/9 + 1/27 + 1/81 + ...
i) first term = 1/3, ratio = 1/3
j) sum = 1/2.  Yes, this makes sense.  Each player has a 50% chance of winning.

2)
PP PS PR PL PSp
SP SS SR SL SSp
RP RS RR RL RSp
LP LS LR LL LSp
SpP SpS SpR SpL SpSp
b) 1/5
c) 2/5
d) 2/5
e) 2/25
f) 2/125
g) 2/625
h) 2/5 + 2/25 + 2/125 + 2/625 + ...
i) first term = 2/5, ratio = 1/5
j) sum = 1/2.  Yes, this makes sense.  Each player has a 50% chance of winning.

3a) 74.6%
b) 97.6%
c) It's better when more people use drugs.