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Eco 602
Week 5 Reading Q's
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1. The size of the sample space is 6, because the order does not matter. You could have M+M, R+R, A+A, M+R, M+A, or R+A.
2. There are 3 ways to collect two of the same species.
3. There are 3 ways to collect two of different species.
4. There is a 1 in 3 probability that the acorn in the left pocket is Q. alba, 0.33 or 33%.
5. There is a 1 in 3 probability that the acorn in the right pocket is Q. macrocarpa, 0.33 or 33%.
6. The events are independent, knowing that you have a Q. rubra does not affect the outcome of your next pick-up, so the probability that the second acorn is also Q. rubra is 0.33 or 33%.
7. The probability of getting two Q. rubra is 1 in 9 or .111, because that event occurs once in the sample space of nine outcomes, new sample space now that order matters, now includes R+M, A+M, and A+R.
8. The probability that you collected exactly one each of Q. alba and Q. rubra is 2 in 9, there are two outcomes that give you one of each if order doesn't matter.
9. The probability that the acorn in your left pocket is Q. alba and in your right is Q. rubra, is .33 x .33 = 1/9, because of the massive sample size, picking up one then another in order does not influence the probability of picking up the second acorn.
10. The sample space for a Poisson distribution is infinite.
11. The sample space is 11, n+1, n=10 = 11.
12. The binomial and Poisson distributions are good for counts because they both measure discrete variables, and the probability of events occurring are equal/independent of each other.
13. A binomial distribution is better in cases with a finite sample space, when you're interested in the probability of success for real world events.