1. What is the effect of a bottleneck on the number of alleles in a population?

2. With a population of 1800 individuals what is the rate of allele loss due only to drift per generation?

3. What is genetic drift and how does it affect the number of alleles in a population?

4. Give a population with 20 males and 35 females what is the Ne? [Use the formula on the slide]. Is the resulting population size smaller or bigger than with 10 males and 45 females? Why?

5. What are the forces that introduce variability into a population?

6. A population has two alleles A and a
   
   (a) You sample for this population and pull out 10 AA and 5 aa. What are the frequencies of A and a?
   
   (b) If these samples were crossed what would be the expected frequencies of each genotype in the next generation?

7. List the assumptions made when the Hardy Weinberg equation is used?

8. What is the Wright-Fisher population model?

9. How does effective population size differ from the true number in the population?

10. Explain inbreeding depression?

11. Define inbreeding

12. Draw and explain the Extinction vortex

13. Two isolated populations are coming together again, one was very large the other one was very small. Describe the problems of these populations before the fall of the barrier and afterwards.

14. What would decrease local adaptation.

15. A population is exponentially growing what does this mean for the number of alleles over long time, let’s assume there is not mutation.