

1. A rancher determines that the average amount of wool produced by a sheep in her flock is 22kg per year. In an attempt to increase the wool production of her flock, the rancher picks five male and five female sheep with the greatest wool production; the average amount of wool produced per sheep by those selected is 32kg. She interbreeds these selected sheep and finds that the average wool production among the progeny of the selected sheep is 28kg. What is the narrow-sense heritability for wool production among the sheep in the rancher's flock? (40 points)
2. Please explain the following important terms:
  - a. Broad-sense heritability (20points)
  - b. Additive genetic variance (20points)
  - c. Linkage disequilibrium (20points)