

A jar contains 100 red marbles and 100 white marbles. An experiment consists of selecting a random sample of 64 marbles and recording the number of red marbles in the sample.

1. What is the mean number of red marbles selected?
  
  
  
  
  
  
  
  
  
  
2. What is the standard deviation for the number of red marbles selected?
  
  
  
  
  
  
  
  
  
  
3. Using the normal approximation to the corresponding binomial distribution, determine the probability of selecting:
  - a) exactly 40 red marbles
  
  
  
  
  
  
  
  
  
  
  - b) at least 40 red marbles
  
  
  
  
  
  
  
  
  
  
  - c) fewer than 40 red marbles