

AP Statistics – Chapter 7 Test Standards

Multiple Choice:

- #1. I can distinguish between a parameter and a statistic.**
- #2. I can distinguish between a parameter and a statistic.**
- #3. I can understand the relationship between sample size and the variability of an estimator and how variability describes the spread of its sampling distribution.**
- #4. I can understand the relationship between sample size and the variability of an estimator and how variability describes the spread of its sampling distribution.**
- #5. I can determine whether a statistic is an unbiased estimator of a population parameter.**
- #6. I can understand the relationship between sample size and the variability of an estimator and how variability describes the spread of its sampling distribution.**
- #7. I can understand the relationship between sample size and the variability of an estimator and how variability describes the spread of its sampling distribution.**
- #8. I can find the mean and standard deviation of the sampling distribution of a sample proportion \hat{p} for an SRS of size n from a population having proportion p of successes.**
- #9. I can find the mean and standard deviation of the sampling distribution of a sample proportion \hat{p} for an SRS of size n from a population having proportion p of successes.**
- #10. I can check whether the 10% and Normal conditions are met in a given setting.**
- #11. I can use Normal approximation to calculate probabilities involving \hat{p} .**
- #12. I can use Normal approximation to calculate probabilities involving \hat{p} .**
- #13. I can use the central limit theorem to help find probabilities involving a sample mean \bar{x} .**
- #14. I can use the central limit theorem to help find probabilities involving a sample mean \bar{x} .**
- #15. I can find the mean and standard deviation of the sampling distribution of a sample mean \bar{x} from an SRS of size n .**
- #16. I can use the central limit theorem to help find probabilities involving a sample mean \bar{x} .**
- #17. I can distinguish between a parameter and a statistic.**
- #18. I can understand the definition of a sampling distribution.**
- #19. I can calculate probabilities involving a sample mean \bar{x} when the population distribution is Normal.**
- #20. (Throwback): I can understand how percentile ranks relate to the quartiles and median of a distribution.**

***Note:**

The questions on the actual test may or may not be presented in this exact order.

Free Response #1 (Standards and Scoring Criteria):

Part 1:

- I can find the mean and standard deviation of the sampling distribution of a sample proportion \hat{p} for an SRS of size n from a population having proportion p of successes.
- I can check whether the 10% and Normal conditions are met in a given setting.
 - Student must be able to correctly identify the mean of a sample proportion and write the answer using the correct symbols.
 - Student must be able to correctly communicate the applicable condition.
 - Student must be able to use the results of the applicable condition and explicitly state the conclusion that can be drawn.

Part 2:

- I can find the mean and standard deviation of the sampling distribution of a sample proportion \hat{p} for an SRS of size n from a population having proportion p of successes.
- I can check whether the 10% and Normal conditions are met in a given setting.
 - Student must be able to correctly identify the mean of a sample proportion and write the answer using the correct symbols.
 - Student must be able to correctly communicate the applicable condition.
 - Student must be able to use the results of the applicable condition and explicitly state the conclusion that can be drawn.

Part 3:

- I can use Normal approximation to calculate probabilities involving \hat{p} .
- I can use the sampling distribution of \hat{p} to evaluate a claim about a population proportion.
 - Student must correctly communicate the probability that is to be computed by using proper symbols throughout the calculation.
 - Student must correctly calculate the probability (arriving at the correct final answer).

Part 4:

- I can use Normal approximation to calculate probabilities involving \hat{p} .
- I can understand the relationship between sample size and the variability of an estimator.
 - Student must correctly communicate the probability that is to be computed by using proper symbols throughout the calculation.
 - Student must correctly calculate the probability (arriving at the correct final answer).
 - Student must correctly be able to communicate how sample size will affect variability.

Free Response #2 (Standards and Scoring Criteria):

Part 1:

- I can find the mean and standard deviation of the sampling distribution of a sample mean \bar{x} from an SRS of size n .
- I can check whether the 10% and Normal conditions are met in a given setting.
 - Student must be able to correctly calculate the standard deviation of a sampling distribution and write the answer using the correct symbols.
 - Student must be able to correctly communicate the applicable condition and use the results of the applicable condition and explicitly state the conclusion that can be drawn.

Part 2:

- I can check whether the 10% and Normal conditions are met in a given setting.
- I can explain how the shape of the sampling distribution of \bar{x} is related to the shape of the population distribution.
- I can use the central limit theorem to help find probabilities involving a sample mean \bar{x} .
 - Student must be able to correctly communicate the applicable condition and use the results of the applicable condition and explicitly state the conclusion that can be drawn.
 - Student must correctly communicate the probability that is to be computed by using proper symbols throughout the calculation.
 - Student must correctly calculate the probability (arriving at the correct final answer).

Part 3:

- I can use the central limit theorem to help find probabilities involving a sample mean \bar{x} .
 - Student must correctly communicate the probability that is to be computed by using proper symbols throughout the calculation.
 - Student must correctly calculate the probability (arriving at the correct final answer).

Part 4:

- I can determine whether a statistic is an unbiased estimator of a population parameter.
- I can understand the relationship between sample size and the variability of an estimator.
 - Student must be able to give a general “yes” or “no” answer correctly based on the question.
 - Student must be able to properly communicate the results for the “yes” or “no” answer to the question.