

## Final exam STA2023 Topics

[mystatclass.com](http://mystatclass.com)

Exam consists of 15 questions (ALEKS)

1. Classify variables as qualitative or quantitative, continuous or discrete.
2. Given a dataset, calculate the mean, median, mode, midrange.
3. Given a dataset, calculate range, standard deviation and variance.
4. Calculate the z-score for a given value knowing the population mean and standard deviation.
5. Calculate probabilities:
  - a) based on the definition  $p(E) = \frac{nE}{n(Total)}$
  - b) based on  $P(A \text{ or } B) = P(A) + P(B)$  &  $P(A \text{ and } B) = P(A) + P(B) - P(A \text{ and } B)$
6. Calculate probabilities based on  $P(A \text{ and } B \text{ and } C \text{ etc}) = P(A) \times P(B) \times P(C) \dots \text{etc}$
7. Calculate probability of *at least one event*.
8. Solve permutations problems using  $nPr$  and combinations problems using  $nCr$ .
9. Calculate probabilities for binomial situations using the binomial distribution.
10. Calculate probabilities for normal distributed variables using the normal distribution.
11. Calculate probabilities for normal distributed variables using the normal distribution, sample  $n > 1$ .
12. Find confidence intervals for the mean sigma known and unknown.
13. Find confidence intervals for a proportion.