

Final Exam Review

MATH 225





Identify the null and alternative hypotheses

A hospital claims that the mean wait time for emergency room patients is at least 55 minutes. A group of researchers believe that this is not accurate, and want to show that the mean wait time is less than 55 minutes. Identify the group's null hypothesis, H_0 , and alternative hypothesis, H_a , in terms of the parameter μ .



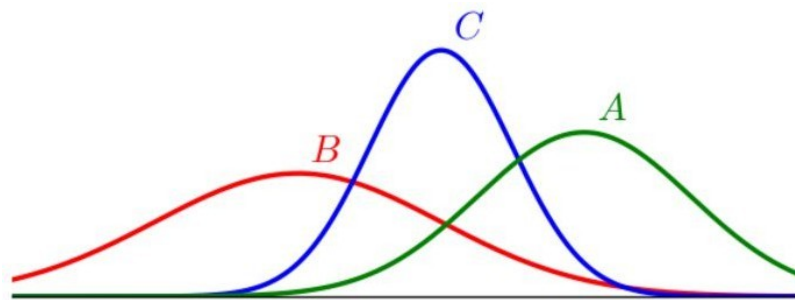
Identify the null and alternative hypotheses

Which of the following results in the null hypothesis $\mu \geq 38$ and alternative hypothesis $\mu < 38$?

- ☐ A fitness center claims that the mean amount of time that a person spends at the gym per visit is at most 38 minutes.
- ☐ A fitness center claims that the mean amount of time that a person spends at the gym per visit is fewer than 38 minutes.
- ☐ A fitness center claims that the mean amount of time that a person spends at the gym per visit is 38 minutes.
- ☐ A fitness center claims that the mean amount of time that a person spends at the gym per visit is more than 38 minutes.

Understand the notation and interpret the parameters of a normal distribution

The graph below shows the graphs of several normal distributions, labeled A, B, and C, on the same axis. Determine which normal distribution has the largest mean.





Determine whether a study is observational or an experiment and appropriate use cases

A study is planned to research the effects of drinking coffee on hours of sleep. Would an experimental or observational study design be more appropriate?

1. An observational study should be used because it is not possible to control whether or not a person drinks coffee.
2. An observational study should be used because it is not possible to control the number of hours of sleep a person has.
3. An experimental study should be used where the consumption of coffee is the experimental factor.
4. An experimental study should be used where the number of hours of sleep is the experimental factor.