# Homework 2 for Stat Inference

(Use the arrow keys to navigate)

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# About these slides

- These are some practice problems for Statistical Inference Quiz 2
- They were created using slidify interactive which you will learn in Creating Data Products
- Please help improve this with pull requests here (https://github.com/bcaffo/courses (https://github.com/bcaffo/courses))

The probability that a manuscript gets accepted to a journal is 12% (say). However, given that a revision is asked for, the probability that it gets accepted is 90%. Is it possible that the probability that a manuscript has a revision asked for is 20%?

- Yeah, that's totally possible.
- No, it's not possible. ✔
- It's not possible to answer this question.

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3/5

Suppose that the number of web hits to a particular site are approximately normally distributed with a mean of 100 hits per day and a standard deviation of 10 hits per day. What's the probability that a given day has fewer than 93 hits per day expressed as a percentage to the nearest percentage point?

- 76%
- 24% ✔
- 47%
- 94%

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4/5

Suppose 5% of housing projects have issues with asbestos. The sensitivity of a test for asbestos is 93% and the specificity is 88%. What is the probability that a housing project has no asbestos given a negative test expressed as a percentage to the nearest percentage point?

- 0%
- 5%
- 10%
- 20%
- 50%
- 100%

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5/5

Suppose that the number of web hits to a particular site are approximately normally distributed with a mean of 100 hits per day and a standard deviation of 10 hits per day.

1. What number of web hits per day represents the number so that only 5% of days have more hits? Express your answer to 3 decimal places.

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Suppose that the number of web hits to a particular site are approximately normally distributed with a mean of 100 hits per day and a standard deviation of 10 hits per day.

1. Imagine taking a random sample of 50 days. What number of web hits would be the point so that only 5% of averages of 50 days of web traffic have more hits? Express your answer to 3 decimal places.

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You don't believe that your friend can discern good wine from cheap. Assuming that you're right, in a blind test where you randomize 6 paired varieties (Merlot, Chianti, ...) of cheap and expensive wines

1. What is the change that she gets 5 or 6 right expressed as a percentage to one decimal place?

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Consider a uniform distribution. If we were to sample 100 draws from a a uniform distribution (which has mean 0.5, and variance 1/12) and take their mean, \(\bar X\)

1. What is the approximate probability of getting as large as 0.51 or larger expressed to 3 decimal places?

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If you roll ten standard dice, take their average, then repeat this process over and over and construct a histogram,

1. what would it be centered at?

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If you roll ten standard dice, take their average, then repeat this process over and over and construct a histogram,

1. what would be its variance expressed to 3 decimal places?

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The number of web hits to a site is Poisson with mean 16.5 per day.

1. What is the probability of getting 20 or fewer in 2 days expressed as a percentage to one decimal place?

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