Week 10 Monday

Important Ideas

Make sure you know your neighbors' names, then discuss:

What do you think are 2–3 of the most important ideas we've discussed this quarter?

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Inference for Regressions

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1. Here are three scatterplots. Which of the following is most accurate about the p-value for the hypothesis that the best fit line is horizontal?



(A) The one on the left has the highest p-value(B) The one in the middle has the highest p-value(C) The one on the right has the highest p-value(D) None of the above OR can't say for sure

2. Here are two scatterplots. Which of the following is most accurate?



- (A) Both have high p-value
- (B) Both have low p-value; left has a higher R^2
- (C) Both have low p-value; right has a higher R^2
- (D) None of the above OR can't say for sure

3. You collect 1000 data points and use software to find that the best fit line for the scatterplot has equation y = 0.5x + 1.0and that the *T* test statistic associated to the slope is 2.1. What is the p-value for the hypothesis that the best fit line has slope 0?

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- (A) pnorm(2.1)
- (B) 2*(1-pnorm(2.1))
- (C) pt(2.1, 998)
- (D) None of the above

Review

4. Suppose 27% of white transgender people have experienced discriminatory treatment from a health care provider, and that the same statistic among transgender people of color is 68%. Among transgender people, which of the following statements is most accurate about being a person of color and having experienced discriminatory treatment from a health care provider?

- (A) They are independent and disjoint events.
- (B) They are independent events, but they are not disjoint.
- (C) They are disjoint events, but they are not independent.
- (D) They are neither independent nor disjoint events.

5. Japan experiences an earthquake of magnitude at least 8.0 every 5 years on average. What is the probability that Japan experiences no earthquakes of magnitude at least 8.0 in the 2030s?

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6. Roughly 9% of Californians identify as LGBT. Which of the following can be modeled using a binomial random variable?

- (A) The number of random Californians you need to sample before you find your first Californian who identifies as LGBT.
- (B) The number of people identifying as LGBT in a simple random sample of 500 Californians.
- (C) The proportion of people identifying as LGBT in a simple random sample of 500 Californians.

(D) None of the above.