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1.   True or False?

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Follow-up. How many times would you have to flip the coin for it to be possible for you to reject the null hypothesis with significance level 0.05?

2. You're playing a game with 100 rounds. On each round, you have a 20% chance of winning. How many rounds do you expect to win?

(A) 10

(B) 20

(C) 30

(D) None of the above

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Follow-up. What is the standard deviation of the number of rounds you win? Is the distribution of the number of rounds you win roughly normal?

3. A study examined the average pay for men and women entering the workforce as doctors for 21 different positions. If each gender was equally paid, then we would expect about half of those positions to have men paid more than women, and the other half to have women paid more than men. The study found that, men were, on average, paid more in 19 of those 21 positions.

Conduct a p-value hypothesis with significance level 0.05 test to determine if this data provides evidence of a gender pay gap in medicine.

4. The General Social Survey asked the question: "For how many days during the past 30 days was your mental health, which includes stress, depression, and problems with emotions, not good?" Based on responses from 1151 US residents, the survey reported a 95% confidence interval of 3.40 to 4.24 days in 2010.

4. True or False?

This confidence interval means that 95% of US residents had poor mental health for between 3.40 and 4.24 days out of the past 30.

5.   A poll conducted by the Kaiser family foundation shows that 79% of 347 Democrats and 55% of 617 Independents support a generic "National Health Plan."

Conduct a hypothesis test with significance level 0.05 to determine if the rate of support for a National Health Plan is the same between Democrats and Independents. Do it twice: once using a confidence interval, and again using p-values.