

Math 107

Confidence Intervals: Sampling Distributions
(Sections 3.1 & 3.2)

Your Turn

- A random sample of 1,015 US adults conducted April 6-10 2016 found that 53% believe that their taxes are too high.
- $SE = 0.02$
- Find a 95% confidence interval for the true population proportion of all US adults that think their taxes are too high?

2012 Presidential Election Polls

General Election: Romney vs. Obama

RCP Electoral Map | Changes in Electoral Count | Map With No Toss Ups | No Toss Up Changes

Polling Data						
Poll	Date	Sample	MoE	Obama (D)	Romney (R)	Spread
RCP Average	9/4 - 9/11	--	--	48.6	45.2	Obama +3.4
Rasmussen (Wednesday)	3-Day Tracking	1500 LV	3.0	46	45	Obama +1
Gallup (Wednesday)	7-Day Tracking	3050 RV	2.0	50	43	Obama +7
ABC News/Wash Post	9/7 - 9/9	710 LV	4.5	49	48	Obama +1
CNN/Opinion Research	9/7 - 9/9	709 LV	3.5	52	46	Obama +6
IBD/CSM/TIPP	9/4 - 9/9	808 RV	3.5	46	44	Obama +2

1. Why is the margin of error smaller for the Gallup poll than the ABC news poll?
2. Using the Gallup poll, calculate a 95% confidence interval for the proportion of registered voters who planned to vote for Obama.

Your Turn

Using a sample of 24 deliveries described in “Diary of a Pizza Girl” on the Slice website, we find a 95% confidence interval for the mean tip given for a pizza delivery to be \$2.18 to \$3.90. Which of the following is a correct interpretation of this interval? Indicate all that are correct interpretations.

1. I am 95% sure that all pizza delivery tips will be between \$2.18 and \$3.90.
2. 95% of all pizza delivery tips will be between \$2.18 and \$3.90.
3. I am 95% sure that the mean pizza delivery tip for this sample will be between \$2.18 and \$3.90.
4. I am 95% sure that the mean tip for all pizza deliveries in this area will be between \$2.18 and \$3.90.
5. I am 95% sure that the confidence interval for the mean pizza delivery tip will be between \$2.18 and \$3.90.
6. The probability that the mean tip for all pizza deliveries in this area is between \$2.18 and \$3.90 is 0.95.