

Self-Check 8.1

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1. Suppose we have data from a sample. The sample mean is 15, and the error bound for the mean is 3.2. What is the confidence interval estimate for the population mean?
2. Suppose average pizza delivery times are normally distributed with an unknown population mean and a population standard deviation of six minutes. A random sample of 28 pizza delivery restaurants is taken and has a sample mean delivery time of 36 minutes.

Find a 90% confidence interval estimate for the population mean delivery time. Write an interpretation.

3. How many adults must be randomly selected to estimate the mean FICO (credit rating) score of working adults in the United States? We want 95% confidence that the sample mean is within 3 points of the population mean, and the population standard deviation is 68.

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4. The table below shows a different random sampling of 20 cell phone models. Use this data to calculate a 93% confidence interval for the true mean SAR for cell phones certified for use in the United States. As previously, assume that the population standard deviation is $\sigma = 0.337$. And write an interpretation.

Phone Model	SAR
Blackberry Pearl	1.48
HTC Evo Design 4G	0.8
HTC Freestyle	1.15
LG Ally	1.36
LG Fathom	0.77
LG Optimus Vu	0.462
Motorola Cliq XT	1.36
Motorola Droid Pro	1.39
Motorola Droid Razr M	1.3
Nokia 7705 Twist	0.7
Nokia E71x	1.53
Nokia N75	0.68
Nokia N79	1.4
Sagmen Puma	1.24
Samsung Fascinate	0.57
Samsung Infuse 4G	0.2
Samsung Nextus S	0.51
Samsung Replenish	0.3
Sony W518a Walkman	0.73
ZTE C79	0.869

5. Find the critical value, $Z_{\alpha/2}$ corresponding to a 92% confidence level.

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