5.6 Confidence Intervals

Margin of error:

Confidence Interval:

Confidence level:

Ex. A survey reports that 83% of university students study at least 20hrs/week. The survey is accurate within ±3.5%, 19 out of 20 times. Use confidence intervals to interpret the data.

Ex. A survey of 600 students found that 46% drove to school Results were accurate within ±4%, 19 times out of 20. What is the confidence level? Confidence interval? What is the confidence interval for 92 500 students?

Ex. Manufacturers produce baseballs with a mean mass of 145g. A random sample is taken to determine if they meet the standards. If the mean mass of the random sample is 144.7g to 145.3g then the machine is running properly.

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| Confidence Level | Sample Size |
| 99%  | 110 |
| 95%  | 65 |
| 90% | 40 |

1. If the CI is 144.7 to 145.3, what is the margin of error?
2. What sample size is needed to be accurate 9 times out of 10?
3. What is the relationship between sample size, CI and margin of error?