

Name: _____

Date: _____

Example A poll determined that 72% of people who live in Canada think that cats make good pets for the elderly. The results of this survey are considered accurate within ± 2.6 percentage points, 18 times out of 20.

- a. 72% is an _____ and 2.6 is the _____.

- b. State the confidence level (in two different ways, if possible.)

- c. Determine the confidence interval.

- d. The population of Canada was 30 million at the time the survey was taken. State the range of the number of people who believe that cats are good pets for the elderly.

- e. This survey was conducted by contacting 1020 Canadians by phone. Would you have felt any differently about the results if the pollsters had only spoken to 400 Canadians?

Confidence Interval:

Confidence Level:

Example To meet regulation standards, baseballs must have a mass from 142.0 g to 149.0 g. A manufacturing company has set its production equipment to create baseballs that have a mean mass of 145.0 g.

To ensure the production equipment continues to operate as expected, the quality control engineer takes a random sample of baseballs each day and measures their mass to determine the mean mass. If the mean mass of the random sample is

144.7g to 145.3 g

Then the production equipment is running correctly.

Confidence Level	Sample Size needed
99%	110
95%	65
90%	45

What is the confidence interval and margin of error the engineer is using for quality control tests?

Interpret the table.

What is the relationship between confidence levels and sample size?