Questions: Introduction to confidence intervals

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Summary

A selection of questions to test your understanding of confidence intervals, using the normal distribution.

Before attempting these questions it is highly recommended that you read Guide: Introduction to confidence intervals.

Q1

Identify the confidence level from these alpha values.

1.1. $\alpha = 0.05$

1.2. $\alpha = 0.1$

1.3. $\alpha = 0.01$

Q2

Using the normal distribution, what are the Z Values for these alpha values? You may find Calculator: Z-score helpful.

2.1. $\alpha = 0.05$

2.2. $\alpha = 0.1$

2.3. $\alpha = 0.01$

Q3

Cantor's Confectionery want to calculate a 90% confidence interval for the weight of 178 chocolate swirls. The average weight of this sample is $14g$ and the standard deviation is $0.75g$.

identify the following:

3.1. $n =$ sample size

3.2. $\bar{x} =$ sample mean

3.3. $\sigma =$ sample standard deviation

3.4. $\alpha =$ alpha value

3.5. $Z_{\frac{\alpha}{2}} =$ Z value using the normal distribution

Q4

4.1. Use the information in **Q3** to construct a 90% confidence interval for the weight of Cantor's Confectionery's chocolate swirls.

4.2 Explain what the confidence interval tells you in context of Cantor's Confectionery.

Q5

Use the summary table to construct the following:

5.1 a 90% CI

5.2 a 95% CI

5.3 a 99% CI

σ	4
$\bar{x}$	31
σ^2	16
n	59

After attempting the questions above, please click this link to find the answers.

Version history and licensing

v1.0: initial version created 12/04 by mh392 (as part of a University of St Andrews VIP project)