

In-Video Quiz Questions for
Unit 3: Part 2 – Accuracy vs. precision

(02:07)

1. Given that the critical value for a 95% confidence interval is 1.96, for a 98% confidence interval is 2.33, and for a 99% confidence interval is 2.58, what happens to the width of the confidence interval as the confidence level increases (all else held constant)?
 - (a) As the confidence level increases the interval gets wider.
 - (b) As the confidence level increases the interval gets narrower.

(07:32)

2. The General Social Survey (GSS) is a sociological survey used to collect data on demographic characteristics and attitudes of residents of the United States. In 2010, the survey collected responses from 1,154 US residents. Based on the survey results, a 95% confidence interval for the average number of hours Americans have to relax or pursue activities that you enjoy after an average work day is 3.53 to 3.83 hours. Which of the following is **false**?
 - (a) The margin of error is 0.3 hours.
 - (b) The standard error is approximately 0.075 hours.
 - (c) The sample mean is 3.68 hours.
 - (d) Increasing the confidence level would result in a more accurate but less precise confidence interval.

Answers:

1. a

Explanation: The higher the confidence level, the larger the critical value, hence the larger the margin of error, and hence the width of the confidence interval.

2. a

Explanation: The margin of error is $(3.83 - 3.53) / 2 = 0.3 / 2 = 0.15$ hours.