#1 ID: 53d97af5

A study was done on the weights of different types of fish in a pond. A random sample of fish were caught and marked in order to ensure that none were weighed more than once. The sample contained 150 largemouth bass, of which 30% weighed more than 2 pounds. Which of the following conclusions is best supported by the sample data?

A) The majority of all fish in the pond weigh less than 2 pounds.

B) The average weight of all fish in the pond is approximately 2 pounds.

C) Approximately 30% of all fish in the pond weigh more than 2 pounds.

D) Approximately 30% of all largemouth bass in the pond weigh more than 2 pounds.

#2 ID: f8f79e11

A park ranger asked a random sample of visitors how far they hiked during their visit. Based on the responses, the estimated mean was found to be 4.5 miles, with an associated margin of error of 0.5 miles. Which of the following is the best conclusion from these data?

A) It is likely that all visitors hiked between 4 and 5 miles.

B) It is likely that most visitors hiked exactly 4.5 miles.

C) It is not possible that any visitor hiked less than 3 miles.

D) It is plausible that the mean distance hiked for all visitors is between 4 and 5 miles.

#3 ID: e03f3477

A sample consisting of 720 adults who own televisions was selected at random for a study. Based on the sample, it is estimated that 32% of all adults who own televisions use their televisions to watch nature shows, with an associated margin of error of 3.41%. Which of the following is the most plausible conclusion about all adults who own televisions?

A) More than 35.41% of all adults who own televisions use their televisions to watch nature shows.

B) Between 28.59% and 35.41% of all adults who own televisions use their televisions to watch nature shows.

C) Since the sample included adults who own televisions and not just those who use their televisions to watch nature shows, no conclusion can be made.

D) Since the sample did not include all the people who watch nature shows, no conclusion can be made.

#4 ID: 9bedc4a0

A company that produces socks wants to estimate the percent of the socks produced in a typical week that are defective. A random sample of 310 socks produced in a certain week were inspected. Based on the sample, it is estimated that 12% of all socks produced by the company in this week are defective, with an associated margin of error of 3.62%. Based on the estimate and associated margin of error, which of the following is the most appropriate conclusion about all socks produced by the company during this week?

A) 3.62% of the socks are defective.

B) It is plausible that between 8.38% and 15.62% of the socks are defective.

C) 12% of the socks are defective.

D) It is plausible that more than 15.62% of the socks are defective.

#5 ID: fc46af57

A bag containing 10,000 beads of assorted colors is purchased from a craft store. To estimate the percent of red beads in the bag, a sample of beads is selected at random. The percent of red beads in the bag was estimated to be 15%, with an associated margin of error of 2%. If r is the actual number of red beads in the bag, which of the following is most plausible?

A) $r > 1700$

B) $1{,}300 < r < 1{,}700$

C) $200 < r < 1{,}500$

D) $r < 1300$

#6 ID: f04d40b2

From a population of 50,000 people, 1,000 were chosen at random and surveyed about a proposed piece of legislation. Based on the survey, it is estimated that 35% of people in the population support the legislation, with an associated margin of error of 3%. Based on these results, which of the following is a plausible value for the total number of people in the population who support the proposed legislation?

A) 350

B) 650

C) 16,750

D) 31,750

#7 ID: 4096a482

Based on a random sample from a population, a researcher estimated that the mean value of a certain variable for the population is 20.5, with an associated margin of error of 1. Which of the following is the most appropriate conclusion?

A) It is plausible that the actual mean value of the variable for the population is between 19.5 and 21.5.

B) It is not possible that the mean value of the variable for the population is less than 19.5 or greater than 21.5.

C) Every value of the variable in the population is between 19.5 and 21.5.

D) The mean value of the variable for the population is 20.5.

#8 ID: 1e562f24

To estimate the proportion of a population that has a certain characteristic, a random sample was selected from the population. Based on the sample, it is estimated that the proportion of the population that has the characteristic is 0.49, with an associated margin of error of 0.04. Based on this estimate and margin of error, which of the following is the most appropriate conclusion about the proportion of the population that has the characteristic?

A) It is plausible that the proportion is between 0.45 and 0.53.

B) It is plausible that the proportion is less than 0.45.

C) The proportion is exactly 0.49.

D) It is plausible that the proportion is greater than 0.53.

#9 ID: 89f8d08a

A store manager reviewed the receipts from 80 customers who were selected at random from all the customers who made purchases last Thursday. Of those selected, 20 receipts showed that the customer had purchased fruit. If 1,500 customers made purchases last Thursday, which of the following is the most appropriate conclusion?

A) Exactly 75 customers must have purchased fruit last Thursday.

B) Exactly 375 customers must have purchased fruit last Thursday.

C) The best estimate for the number of customers who purchased fruit last Thursday is 75.

D) The best estimate for the number of customers who purchased fruit last Thursday is 375.

#10 ID: 9ee22c16

A random sample of 400 town voters were asked if they plan to vote for Candidate A or Candidate B for mayor. The results were sorted by gender and are shown in the table below.

	Plan to vote for Candidate A	Plan to vote for Candidate B
Female	202	20
Male	34	144

The town has a total of 6,000 voters. Based on the table, what is the best estimate of the number of voters who plan to vote for Candidate A?