SAT Math

Sample Statistics and Margin of Error 1

Question #	ID
1.1	90eed2e5

A city has 50 city council members. A reporter polled a random sample of 20 city council members and found that 6 of those polled supported a specific bill. Based on the sample, which of the following is the best estimate of the number of city council members in the city who support the bill?

A. 6

B. 9

C. 15

D. 30

| **1.2** | e7d9649f |

A random sample of 50 people from a town with a population of 14,878 were asked to name their favorite flavor of ice cream. If 7 people in the sample named chocolate as their favorite ice-cream flavor, about how many people in the town would be expected to name chocolate?

A. 350

B. 2,100

C. 7,500

D. 10,500

| **1.3** | f4b3672a |

A certain forest is 253 acres. To estimate the number of trees in the forest, a ranger randomly selects 5 different 1-acre parcels in the forest and determines the number of trees in each parcel. The numbers of trees in the sample acres are 51, 59, 45, 52, and 73. Based on the mean of the sample, which of the following ranges contains the best estimate for the number of trees in the entire forest?

A. 11,000 to 12,000

B. 12,500 to 13,500

C. 13,500 to 14,500

D. 18,000 to 19,000

Question #	ID
1.4	0108ac2d

At a large high school, 300 students were selected at random and were asked in a survey about a menu change in the school cafeteria. All 300 students completed the survey. It was estimated that 38% of the students were in support of a menu change, with a margin of error of 5.5%. Which of the following is the best interpretation of the survey results?

A. The percent of the students at the school who support a menu change is 38%.

B. The percent of the students at the school who support a menu change is greater than 38%.

C. Plausible values of the percent of the students at the school who support a menu change are between 32.5% and 43.5%.

D. Plausible values of the number of the students at the school who support a menu change are between 295 and 305.

1.5   6a305cd0

In a study, the data from a random sample of a population had a mean of 37, with an associated margin of error of 3. Which of the following is the most appropriate conclusion that can be made about the population mean?

A. It is less than 37.

B. It is greater than 37.

C. It is between 34 and 40.

D. It is less than 34 or greater than 40.

1.6   2c76bcce

A company designs and makes handbags. To estimate the mean weight of the handbags made by the company on a particular day, a sample of the handbags made by the company on that day was selected at random. Based on the sample, it is estimated that the mean weight of all handbags made by the company on that day is 27.8 ounces (oz), with an associated margin of error of 0.02 oz. Based on this estimate and associated margin of error, which of the following is the most plausible conclusion?

A. The mean weight of all handbags made by the company on that day is between 27.78 oz and 27.82 oz.

B. The actual weights of all handbags made by the company on that day are between 27.78 oz and 27.82 oz.

C. The actual weights of all handbags from the sample are between 27.78 oz and 27.82 oz.

D. The mean weight of all handbags made by the company on that day is 27.8 oz.