Name:_____ Class:_____ Date:_____

Quiz Chapter 21

Indicate the answer choice that best completes the statement or answers the question.

	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

A CBS News/New York Times opinion poll asked 1050 adults whether they would prefer balancing the federal budget over cutting taxes; 602 of those asked said "Yes." The poll was carried out by telephone, so people without phones are always excluded from the sample.

1.

1. Find the 95% confidence interval for the population proportion p of all adults who would prefer balancing the federal budget over cutting taxes.

   a. 0.800 ± 0.030

   b. 0.620 ± 0.030

   c. 0.573 ± 0.030

d. 0.573 ± 0.015

In a simple random sample of 100 women from Richmond, Virginia, the average amount of money that these women spent per visit at their hair salons is $32.43. The standard deviation from this sample is $7.84.

2. Which of these is an approximate 95% confidence interval for the mean amount of money that all women in Richmond spend per visit at their hair salons?

a. $\$32.43 \pm \$0.784$
b. $\$32.43 \pm \$1.568$
c. $\$32.43 \pm \$7.84$
d. $\$7.84 \pm \$3.243$
e. $\$7.84 \pm \$6.486$

The student newspaper at a college asks a simple random sample of 250 undergraduates, "Do you favor eliminating supplemental fees for lab courses?" In all, 150 of the 250 are in favor of eliminating such fees.

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3. A 90% confidence interval based on this same sample would have

a. the same center and a larger margin of error.
b. the same center and a smaller margin of error.
c. a larger margin of error and probably a different center.
d. a smaller margin of error and probably a different center.
e. the same center, but the margin of error changes randomly.

4. The margin of error for a 95% confidence interval is 2.8. If we decrease the confidence level to 90%, the margin of error will be

a. biased.
b. 99%.
c. 2.8.
d. smaller than 2.8.
e. larger than 2.8.

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A CBS News/New York Times opinion poll asked 1050 adults whether they would prefer balancing the federal budget over cutting taxes; 602 of those asked said "Yes." The poll was carried out by telephone, so people without phones are always excluded from the sample.

5. A member of Congress requests an 80% confidence interval estimate but with a smaller margin of error. How can we get a smaller margin of error using 80% confidence?

a. Take a larger sample because larger samples result in smaller margins of error.
b. Take a smaller sample because smaller samples result in smaller margins of error.
c. Take another sample of the same size because you might get lucky and get a smaller margin of error.
d. Take a sample of the same size from the adults in Ohio instead of the entire country. Then the population will be smaller, and this will give a smaller margin of error.

6. The _____ says that, as we take more and more observations at random from any population, the distribution of the mean of these observations eventually gets close to a Normal distribution.

a. Statistical inference
b. Normal mean theorem
c. Law of large numbers
d. Central limit theorem

The student newspaper at a college asks a simple random sample of 250 undergraduates, "Do you favor eliminating supplemental fees for lab courses?" In all, 150 of the 250 are in favor of eliminating such fees.

7. Suppose that (unknown to you) 55% of all undergraduates favor eliminating supplemental fees for lab courses. If you took a very large number of simple random samples of size $n = 250$ from this population, the sampling distribution of the sample proportion p would be approximately normal with

a. mean 0.55 and standard deviation 0.015.
b. mean 0.60 and standard deviation 0.06.
c. mean 0.55 and standard deviation 0.06.
d. mean 0.60 and standard deviation 0.03.
e. mean 0.55 and standard deviation 0.03.

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8. Another member of the city government is satisfied with 90% confidence, but she wants a smaller margin of error. How can we get a smaller margin of error, still with 90% confidence?

a. Take a larger sample, because larger samples result in smaller margins of error.
b. Take a smaller sample, because smaller samples result in smaller margins of error.
c. Take another sample of the same size, and you might be lucky and get a much smaller margin of error.
d. Take a sample of adults from a neighborhood in the county instead of from the entire county. Then, the population will be smaller, which will give a smaller margin of error.
e. Carry out a call-in poll to get a voluntary response sample. Voluntary response samples have no margin of error.

The weights for a population of North American raccoons have a bell-shaped frequency curve with a mean of about 12 pounds and a standard deviation of about 2.5 pounds.

9. About 95% of the mean weights from samples of size 100 raccoons from this population fall between what two values?

a. 11.75 and 12.25
b. 11.5 and 12.5
c. 2.5 and 12
d. 7 and 17
e. 9.5 and 14.5

A surprising fact: only 56% of all teens use a password on their mobile device. If a poll chooses a simple random sample of 1000 teens and asks if they use a password on their mobile device, the percent who say "Yes" will vary if the sample is repeated. In fact, the percent "Yes" in many samples will follow a normal distribution with mean 56% and standard deviation 1.6%.

10. Which of these ranges of outcomes contains 95 percent of all the results of a large number of polls of 1,000 teens?

a. 56 to 100 percent
b. 54.4 to 57.6 percent
c. 52.8 to 59.2 percent
d. 51.2 to 60.8 percent

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Answer Key

1. c

2. b

3. b

4. d

5. a

6. d

7. e

8. a

9. b

10. c