| | |
|---|---|
| **Started on** | Sunday, February 6, 2022, 2:34 PM |
| **State** | Finished |
| **Completed on** | Monday, February 7, 2022, 5:59 PM |
| **Time taken** | 1 day 3 hours |
| **Grade** | **18.00** out of 20.00 (**90%**) |

Question **1**
Correct
2.00 points out of 2.00

Which of the following would be considered a discrete random variable?

Select one or more:

- ☑ a.   Number of purchases made at a local store in a hour ✔
- ☑ b.   The size of a refrigerator in stock at a local store (10.5,18.0, 21.4, or 25.5 cubic feet) ✔
- ☐ c.   Weight (in ounces) of a dog
- ☐ d.   Lifetime (in minutes) of a light bulb
- ☑ e.   Ratings on the scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree ✔

Your answer is correct.

The correct answers are: Ratings on the scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree, The size of a refrigerator in stock at a local store (10.5,18.0, 21.4, or 25.5 cubic feet), Number of purchases made at a local store in a hour

Question **2**

Correct

2.00 points out of 2.00

A researcher believes that the ankle circumference for adult males in Europe can be considered to have a normal distribution with a mean of 24 cm.If his belief is correct which of the following ranges of ankle sizes will have the largest proportion of members of this population?

Select one:

- ○ 15 to 21 cm

- ◉ 21 to 27 cm                                                                                                                    ✔

- ○ 27 to 33 cm

- ○ It is impossible to tell without the standard deviation.

The correct answer is: 21 to 27 cm

Question **3**

Correct

2.00 points out of 2.00

The Mental Development Index (MDI) of the Bayley Scales of Infant Development is a standardized measure used in longitudinal follow-up of high-risk infants. The scores on the MDI have approximately a normal distribution with a mean of 100 and standard deviation of 8. What proportion of children have MDI of at least 80?

Round your answer to **3 decimal places**.

Answer: | 0.994 |  ✔

The correct answer is: 0.994

Question **4**

Correct

2.00 points out of 2.00

A state administered standardized reading exam is given to eighth grade students. The scores on this exam for all students statewide have a normal distribution with a mean of 540 and a standard deviation of 83. A local Junior High principal has decided to give an award to any student who scores in the top 15% of statewide scores. How high should a student score be to win this award?

Round your answer to **3 decimal places**.

Answer: | 626.024 |  ✔

The correct answer is: 626.024

Question **5**

Correct

2.00 points out of 2.00

The Central Limit Theorem implies

Select one:

- a.  the distribution of a large population is approximately normal.
- b.  the distribution of the average of a sample from a large population is approximately normal.
- c.  the distribution of a large sample is approximately normal.
- d.  the distribution of the average of a large sample is approximately normal.   ✔

The correct answer is: the distribution of the average of a large sample is approximately normal.

Question **6**

Correct

2.00 points out of 2.00

A large multinational company knows that the average age of their employees is 34 years. They also know that the standard deviation of the ages of these employees is 8 years. We know that the population of employee ages will have a right skewed distribution. A manager from human resources is going to randomly select a sample of 100. Which of the following is true?

Select one or more:

- ☐  The sampling distribution of the mean will have the same standard deviation as the population.
- ☐  We know that the shape of the sampling distribution of the mean will be right skewed.
- ☑  We know that the shape of the sampling distribution of the mean will be approximately symmetric.   ✔
- ☑  The sampling distribution of the mean will have a smaller standard deviation than the population.   ✔
- ☐  The sampling distribution of the mean will have a larger standard deviation than the population.

The correct answers are: We know that the shape of the sampling distribution of the mean will be approximately symmetric., The sampling distribution of the mean will have a smaller standard deviation than the population.

Question **7**

Correct

2.00 points out of 2.00

In engineering and product design, it is important to consider the weights of people so that airplanes or elevators aren't overloaded. Based on data from the National Health Survey, we can assume the weight of adult males in the US has a mean weight of 177 pounds and standard deviation of 32 pounds. We randomly select 50 adult males. What is the probability that the average weight of these 50 adult males is over 175 pounds?

Round your answer to **3 decimal places**.

Answer:     0.671     ✔

The correct answer is: 0.671

Question **8**

Correct

2.00 points out of 2.00

At North Carolina State University it is known that 56% of undergraduates are male. If a sample of 160 undergraduate students was taken, which of the following would accurately describe the sampling distribution?

Select one or more:

☑ The sampling distribution will be approximately normal.                                                                    ✔

☑ The mean of the sampling distribution will be close to 56%                                                            ✔

☐ We can not determine the standard deviation of the sampling distribution from the given information.

☐ The sampling distribution will be skewed left.

☐ The mean of the sampling distribution will be close to 50%

☐ The standard deviation of the sampling distribution will be 0.4964.

☐ The standard deviation of the sampling distribution will be 0.0015

☐ The sampling distribution will be skewed right.

☐ We can not determine the mean of the sampling distribution from the given information.

☑ The standard deviation of the sampling distribution will be 0.0392.                                            ✔

The correct answers are: The sampling distribution will be approximately normal., The mean of the sampling distribution will be close to 56%, The standard deviation of the sampling distribution will be 0.0392.

Question **9**

Correct

2.00 points out of 2.00

78% of the customers with a large, national automobile insurance company have the state minimums (no additional coverage) for insurance. An agent who works for a reginal branch of this company would like to determine if their state's percentage is different. To investigate this, they will select a random sample of customers from their state. Which of the following is more likely:

- ⊙  a.   They select 10 customers and find a sample proportion of 0.52 (52%).                                                        ✔
- ○  b.   They select 25 customers and find a sample proportion of 0.52 (52%).
- ○  c.   They select 50 customers and find a sample proportion of 0.52 (52%).
- ○  d.   They select 100 customers and find a sample proportion of 0.52 (52%).

Your answer is correct.

The correct answer is:
They select 10 customers and find a sample proportion of 0.52 (52%).

Question **10**

Incorrect

0.00 points out of 2.00

At a large university it is known that 30% of the students eat at dinning halls on campus. The director of student life is going to take a random sample of 300 students. What is the probability that less than a quarter of the sampled students eat at dinning halls on campus?

Round your answer to **3 decimal places**.

Answer:    0.282     ✘

The correct answer is: 0.027

◄ ICA2: Normal Distribution

Jump to...

Important Information on the First Midterm Exam ►