

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine which score corresponds to the higher relative position.

1)

Which score has a better relative position: a score of 3.1 on a test for which $\overline{x} = 3.8$ and $s = 0.7$, a score of 22 on a test for which $\overline{x} = 26$ and $s = 5$ or a score of 411.6 on a test for which $\overline{x} = 428$ and $s = 41$?

A) A score of 3.1 B) A score of 411.6 C) A score of 22

Find the indicated probability.

2) A bank's loan officer rates applicants for credit. The ratings are normally distributed with a mean of 200 and a standard deviation of 50. If an applicant is randomly selected, find the probability of a rating that is between 200 and 275.

A) 0.5 B) 0.9332 C) 0.0668 D) 0.4332

3) A company manufactures calculators in batches of 64 and there is a 4% rate of defects. Find the probability of getting exactly three defects in a batch.

A) 0.091 B) 0.139 C) 0.375 D) 0.221

4) A manufacturing process has a 70% yield, meaning that 70% of the products are acceptable and 30% are defective. If three of the products are randomly selected, find the probability that all of them are acceptable.

A) 0.027 B) 0.343 C) 0.429 D) 2.1

5) The table below describes the smoking habits of a group of asthma sufferers.

two way table ((cell cell) (cell cell) (cell cell))

one of the

1058 people is randomly selected, find the probability that the person is a man or a heavy smoker.

A) 0.488 B) 0.552 C) 0.520 D) 0.479

6) A study conducted at a certain college shows that 53% of the school's graduates find a job in their chosen field within a year after graduation. Find the probability that among 5 randomly selected graduates, at least one finds a job in his or her chosen field within a year of graduating.

A) 0.977 B) 0.200 C) 0.530 D) 0.958

7) A class consists of 87 women and 41 men. If a student is randomly selected, what is the probability that the student is a woman?

A) $1/128$ B) $41/128$ C) $87/41$ D) $87/128$

Find the mean for the given sample data.

8) Frank's Furniture employees earned the following amounts last week:

\$ 351.96 \$ 195.35 \$ 219.93 \$ 492.35 \$ 544.40

\$ 250.90 \$ 363.64 \$ 455.08 \$ 286.12

What was the mean amount earned by an employee last week? Round your answer to the nearest cent.

A) \$ 394.97 B) \$ 344.41 C) \$ 351.08 D) \$ 451.39

Find the median for the given sample data.

9) The distances traveled (in miles) to 7 different swim meets are given below:

12, 25, 38, 58, 68, 73, 90

Find the median distance traveled.

- A) 68 miles B) 52 miles C) 38 miles D) 58 miles

Find the necessary sample size.

10) You wish to estimate the mean weight of machine components of a certain type and you require a 92% degree of confidence that the sample mean will be in error by no more than 0.008 g. Find the sample size required. A pilot study showed that the population standard deviation is estimated to be 0.09 g.

- A) 20 B) 388 C) 252 D) 16

Find the standard deviation for the given data. Round your answer to one more decimal place than the original data.

11)

The manager of a small dry cleaner employs six people. As part of their personnel file, she asked each one to record to the nearest one-tenth of a mile the distance they travel one way from home to work. The six distances are listed below:

12.6 10.5 27.7 27.4 16.5 21.8 the standard deviation s.

- A) 7.38 B) 2534.6 C) 27.5 D) 2262.0

Find the z-score corresponding to the given value and use the z-score to determine whether the value is unusual. Consider a score to be unusual if its z-score is less than -2.00 or greater than 2.00. Round the z-score to the nearest tenth if necessary.

12) A body temperature of 99.8° F given that human body temperatures have a mean of 98.20° F and a standard deviation of 0.62°.

- A) 1.6; not unusual B) 2.5; unusual
C) -2.5; unusual D) 2.5; not unusual

Identify the number as either continuous or discrete.

13) The height of 2-year-old maple tree is 28.3 ft.

A) Discrete B) Continuous

If Z is a standard normal variable, find the probability.

14) The probability that Z lies between 0.7 and 1.98

A) -0.2181 B) 1.7341 C) 0.2181 D) 0.2175

Solve the problem.

15) The heights of the adults in one town have a mean of 67.3 inches and a standard deviation of 3.4 inches. What can you conclude from Chebyshev's theorem about the percentage of adults in the town whose heights are between 60.5 and 74.1 inches?

A) The percentage is at most 75% B) The percentage is at least 95%

C) The percentage is at least 75% D) The percentage is at most 95%

16) A study of the amount of time it takes a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.4 hours and the standard deviation is 1.8 hours. If 40 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 9.1 hours.

A) 0.0046 B) 0.1046 C) 0.0069 D) 0.1285

17) Assume that z scores are normally distributed with a mean of 0 and a standard deviation of 1. If $P(z > c) = 0.1093$, find c.

A) 1.23 B) 0.27 C) -1.23 D) 0.4562

18) Scores on a test are normally distributed with a mean of 63.9 and a standard deviation of 10.9. Find the value of P_81 .

- A) 67.1 B) 0.88 C) 73.5 D) 0.291

Use the given degree of confidence and sample data to construct a confidence interval for the population proportion p .

19) A survey of 300 union members in New York State reveals that 112 favor the Republican candidate for governor. Construct the 98% confidence interval for the true population proportion of all New York State union members who favor the Republican candidate.

- A) $0.316 < p < 0.430$ B) $0.308 < p < 0.438$
C) $0.304 < p < 0.442$ D) $0.301 < p < 0.445$

Find the indicated probability.

20) The table below describes the smoking habits of a group of asthma sufferers.

two way table ((cell cell) (cell cell) (cell cell))

one of the

1088 subjects is randomly selected, find the probability that the person chosen is a nonsmoker given that it is a woman. Round to the nearest thousandth.

- A) 0.388 B) 0.353 C) 0.723 D) 0.496

21) A study conducted at a certain college shows that 53% of the school's graduates find a job in their chosen field within a year after graduation. Find the probability that among 5 randomly selected graduates, at least one finds a job in his or her chosen field within a year of graduating.

- A) 0.200 B) 0.958 C) 0.977 D) 0.530

Is Event B dependent or independent of Event A?

22) A: A green ball is drawn from a box with five balls and placed next to the box. B: A red ball is drawn next and placed next to the green one.

- A) Dependent B) Independent

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) B

2) D

3) D

4) B

5) C

6) A

7) D

8) C

9) D

10) B

11) A

12) B

13) B

14) C

15) C

16) C

17) A

18) C

19) B

20) C

21) C

22) A