

Relax and answer each of these question in the space provided.

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

Determine whether the given value is a statistic or a parameter.

- 1) After inspecting all of 55,000 kg of meat stored at the Wurst Sausage Company, it was found that 45,000 kg of the meat was spoiled. 1) _____
A) Statistic B) Parameter

Identify the number as either continuous or discrete.

- 2) The total number of phone calls a sales representative makes in a month is 425. 2) _____
A) Continuous B) Discrete

Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

- 3) Survey responses of "good, better, best". 3) _____
A) Ordinal B) Nominal C) Interval D) Ratio
- 4) Amount of fat (in grams) in cookies. 4) _____
A) Ratio B) Ordinal C) Interval D) Nominal

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use critical thinking to develop an alternative conclusion.

- 5) In a study of headache patients, every one of the study subjects with a headache was found to be improved after taking a week off of work. Conclusion: Taking time off work cures headaches. 5) _____

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

Is the study experimental or observational?

- 6) A T.V. show's executives raised the fee for commercials following a report that the show received a "No. 1" rating in a survey of viewers. 6) _____
A) Observational B) Experimental

Identify the type of observational study.

- 7) Researchers collect data by interviewing athletes who have won olympic gold medals from 1980 to 1992. 7) _____
A) Retrospective B) Cross-sectional
C) Prospective D) None of these

Identify which of these types of sampling is used: random, stratified, systematic, cluster, convenience.

8) An education researcher randomly selects 48 middle schools and interviews all the teachers at each school. 8) _____

- A) Systematic
- B) Random
- C) Convenience
- D) Stratified
- E) Cluster

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use the given data to construct a frequency distribution.

9) Kevin asked some of his friends how many hours they had worked during the previous week at their after-school jobs. The results are shown below. 9) _____

6 5 6 4 6 6 9 7 6 3 8 5
5 8 6 5 8 6 5 7 5 8 7 4

Construct a frequency table. Use 4 classes, a class width of 2 hours, and a lower limit of 3 for class 1.

Hours	Frequency

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

Find the original data from the stem-and-leaf plot.

10) _____

Stem	Leaves
8	5 8
9	1 8
10	5 5

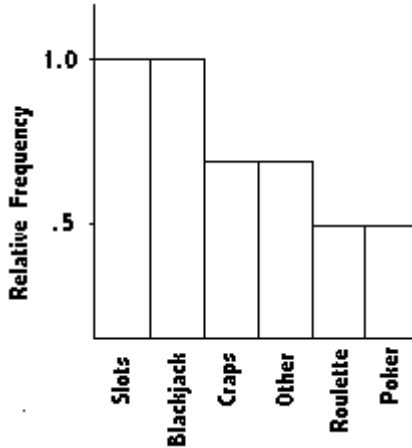
- A) 81, 85, 81, 98, 108, 105
- B) 85, 88, 91, 98, 105, 105
- C) 85, 81, 88, 91, 101, 105
- D) 85, 88, 91, 91, 105, 105

Solve the problem.

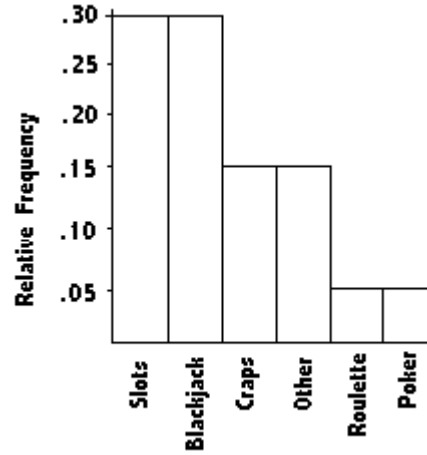
11) 260 casino patrons, were interviewed as they left the casino. 78 of them said they spent most of the time playing the slots. 78 of them said they played blackjack. 39 said they played craps. 13 said roulette. 13 said poker. The rest were not sure what they played the most. Construct a Pareto chart to depict the gaming practices of the group of casino goers. Choose the vertical scale so that the relative frequencies are represented.

11) _____

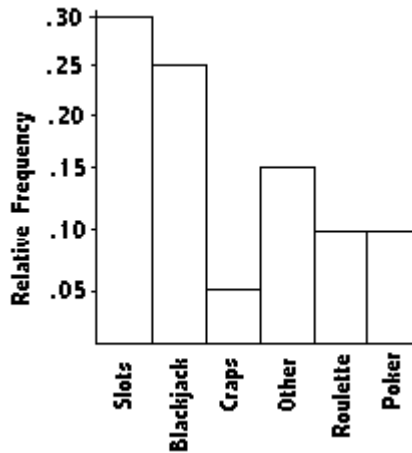
A)



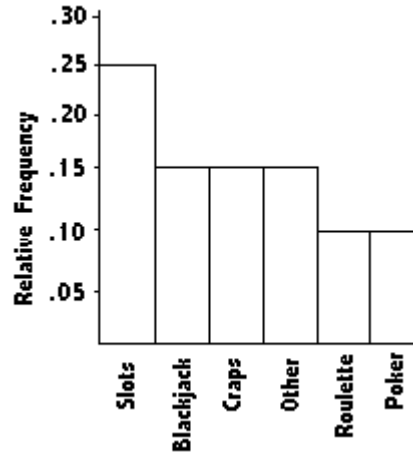
B)



C)



D)



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

12) 196, 205, 215, 185, 229, 278, 165

12) _____

A) 36.2

B) 12.7

C) 33.1

D) 30.2

Find the standard deviation of the data summarized in the given frequency distribution.

- 13) The test scores of 40 students are summarized in the frequency distribution below. Find the standard deviation. 13) _____

Score	Students
50 - 59	5
60 - 69	5
70 - 79	11
80 - 89	7
90 - 99	12

- A) $s = 13$ B) $s = 12.3$ C) $s = 13.7$ D) $s = 14.4$

Use the empirical rule to solve the problem.

- 14) The amount of Jen's monthly phone bill is normally distributed with a mean of \$75 and a standard deviation of \$9. What percentage of her phone bills are between \$48 and \$102? 14) _____

- A) 99.99% B) 68.26% C) 99.74% D) 95.44%

Solve the problem.

- 15) The ages of the members of a gym have a mean of 47 years and a standard deviation of 10 years. What can you conclude from Chebyshev's theorem about the percentage of gym members aged between 22 and 72? 15) _____

- A) The percentage is at least 60% B) The percentage is at least 84%
C) The percentage is at most 84% D) The percentage is approximately 60%

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.

- 16) A time for the 100 meter sprint of 15.0 seconds at a school where the mean time for the 100 meter sprint is 17.5 seconds and the standard deviation is 2.1 seconds. 16) _____

- A) 1.2; not unusual B) -2.5; unusual
C) -1.2; not unusual D) -1.2; unusual

Determine which score corresponds to the higher relative position.

- 17) Which score has a higher relative position, a score of 43 on a test for which $\bar{x} = 31$ and $s = 8$, or a score of 309.5 on a test for which $\bar{x} = 251$ and $s = 39$? 17) _____

- A) A score of 43
B) A score of 309.5
C) Both scores have the same relative position.

Find the indicated measure.

- 18) Use the given sample data to find Q_3 . 18) _____
49 52 52 52 74 67 55 55

- A) 67.0 B) 6.0 C) 55.0 D) 61.0

Find the indicated probability.

- 19) A bag contains 6 red marbles, 3 blue marbles, and 7 green marbles. If a marble is randomly selected from the bag, what is the probability that it is blue? 19) _____
- A) $\frac{1}{13}$ B) $\frac{1}{7}$ C) $\frac{3}{16}$ D) $\frac{1}{3}$

Estimate the probability of the event.

- 20) A polling firm, hired to estimate the likelihood of the passage of an up-coming referendum, obtained the set of survey responses to make its estimate. The encoding system for the data is: 0 = FOR, 1 = AGAINST. If the referendum were held today, estimate the probability that it would pass. 20) _____
- 0, 1, 1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0
- A) 0.4 B) 0.5 C) 0.6 D) 0.65

Answer the question.

- 21) In a certain town, 25% of people commute to work by bicycle. If a person is selected randomly from the town, what are the odds against selecting someone who commutes by bicycle? 21) _____
- A) 3 : 1 B) 3 : 4 C) 1 : 3 D) 1 : 4

Determine whether the events are mutually exclusive.

- 22) Get stung by a bee. 22) _____
Get stung by a wasp.
- A) No B) Yes

Find the indicated probability.

- 23) Based on meteorological records, the probability that it will snow in a certain town on January 1st is 0.230. Find the probability that in a given year it will not snow on January 1st in that town. 23) _____
- A) 4.348 B) 1.230 C) 0.299 D) 0.770

- 24) The table below describes the smoking habits of a group of asthma sufferers. 24) _____

	Nonsmoker	Occasional smoker	Regular smoker	Heavy smoker	Total
Men	384	33	64	49	530
Women	349	44	72	38	503
Total	733	77	136	87	1033

If one of the 1033 people is randomly selected, find the probability that the person is a man or a heavy smoker.

- A) 0.502 B) 0.597 C) 0.563 D) 0.550

Answer Key

Testname: 2006 FALL TEST 1

- 1) B
- 2) B
- 3) A
- 4) A
- 5) Headaches generally last for only a few hours, so anything would seem like a cure. There is no evidence to suggest that taking time off work will cure a headache.
- 6) A
- 7) A
- 8) E
- 9)

Hours	Frequency
3 - 4	3
5 - 6	13
7 - 8	7
9 - 10	1

- 10) B
- 11) B
- 12) A
- 13) C
- 14) C
- 15) B
- 16) C
- 17) C
- 18) D
- 19) C
- 20) C
- 21) A
- 22) A
- 23) D
- 24) D